ASBPE Magazine of the Year 2006

STOPPED CHECKS
ERP glitches cause payroll problems for Florida school workers. PAGE 14

TICKET TO RIDE
Zipcar drivers use RFID-based 'Zipcards' to rent vehicles by the hour or the day. PAGE 21

COMPUTERWORLD

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DECEMBER 18, 2006 ■ VOL. 40 ■ NO. 51 ■ $5/COPY

RICHARD BORGE

It's still a "Man Bites Dog" story **when a CIO is promoted to CEO,** but more CIOs are making the leap. Here's **how to prepare for the corner office** and what to do when you get there. Page 27

Counties Work to Hide Data

Records pulled offline; info blacked out

BY JAIKUMAR VIJAYAN

On Oct. 10, the Orange County comptroller's office in Florida completed an 18-month project to remove sensitive personal information from images of official public records posted on its Web site.

The $750,000 effort involved a review of over 30 million pages in more than 12 million documents to look for data such as Social Security, bank account, and credit and debit card numbers. In the end, 777,635 pages — 2.6% of the total reviewed — were found to contain personal data and were redacted.

"There's going to be something we missed," acknowledged Carol Foglesong, the county's assistant comptroller. "But I think we got 99%" of the items that needed to be removed.

Orange County's efforts are being replicated in dozens of counties nationwide as local governments scramble to pull documents from their Web sites or black out personal data from images of title deeds, tax liens, court papers and other public records.

As reported by *Computerworld* earlier this year, such

County Data, page 37

NEWSPAPER

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Software Blamed for Voting Woes

Report says design flaws, lack of tests on new app led to delays in Denver

BY TODD R. WEISS

Poor software design and a lack of testing on a critical application were the main causes of hours-long voting delays in Denver last month, according to a scathing report written by outside consultants.

ONLINE
For more coverage of voting technology, visit our Web site: computerworld.com/evoting

The 32-page report, dated Dec. 8 and released by city officials last week, also detailed a series of IT management deficiencies at the Denver Election Commission. But it pointed the finger primarily at a new electronic poll book application developed for the DEC by Sequoia Voting Systems Inc. The report blasted Sequoia for "decidedly subprofessional architecture and construction" work on the ePollBook software.

"The ePollBook is a poorly designed and fundamentally flawed application that demonstrates little familiarity with basic tenets of Web development," consultants Fred Hessler and Matt Smith wrote. Hessler and Smith work in the Greenwood Village, Colo., office of Fujitsu Consulting, which was hired by the DEC to find out what went wrong on Election Day.

The poll book software includes names, addresses and other information on all the

Denver Vote, page 14

IN DEPTH

Wireless LANs Reach Round 2

Many IT managers are looking to expand the uses of their wireless LANs by adding new technologies, such as dual-mode phones and high-performance 802.11n devices. But some companies may be held back by concerns about hardware upgrade costs and security. Matt Hamblen reports. PAGE 10

BILL HANNA is overseeing a rollout of 3,300 dual-mode phones at the University of Pittsburgh Medical Center.

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_INFRASTRUCTURE LOG

_DAY 44: This lack of productivity is out of control. No one is getting anything done. What we're using isn't working. Gil's had enough. He moved everyone into one cubicle. A "collaboration" cubicle.

_Note to self: collaborating means showers are a must.

_DAY 46: I'm going with IBM Lotus® Notes® and Domino® instead. It's far more than e-mail; it's an open platform designed for collaboration. It has proven security features and it's packed with productivity enhancers like document sharing and custom app development. It's easy to deploy, and it's flexible enough to integrate across multiple platforms, including J2EE™ and Linux®.

_OK, who sat on my lunch?

Lotus.

Download the Lotus Notes & Domino demo at:
IBM.COM/**TAKEBACKCONTROL**/COLLABORATION

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12.18.06

Application Overload

In the Technology section: Excess software — redundant applications, unused modules in large suites and plain old shelfware — can eat up a big portion of your IT budget. Here are four strategies for putting your software inventory on a diet. **Page 19**

Break This Rule

In the Management section: Like any field, IT management has its conventional wisdom that you ignore at your peril. But there are times when it makes sense to fly in the face of convention. **Page 29**

NEWS

IN DEPTH

Wireless LANs: Round 2

New technologies, such as dual-mode phones, WiMax and 802.11n devices, have the potential to expand the use of wireless LANs. Some IT managers, like BILL HANNA at the University of Pittsburgh Medical Center, are already starting or planning deployments. But *Computerworld*'s Matt Hamblen reports that concerns about hardware upgrade costs and wireless security may keep others from taking the plunge. Page 10

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14 **A $25 million PeopleSoft** ERP project in Palm Beach County, Fla., is plagued with glitches that have caused payroll problems for a significant number of school district employees.

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16 **Don Tennant** cautions against misinterpreting Microsoft VP Jim Allchin's pro-Mac rant of three years ago.

16 **David Moschella** contemplates seven paradoxes that are evident in IT today.

25 **Mark Willoughby** says security breaches haven't triggered a flood of liability lawsuits because data leaks don't make good class-action suits.

32 **Bart Perkins** thinks audits and other assessments shouldn't be dreaded. Instead, they should be embraced as opportunities to re-evaluate direction, change strategy and enter new markets.

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ONLINE

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Browser Smackdown

SOFTWARE: Four experts go head-to-head (-to-head-to-head) to defend their Web browser of choice in an opinionated free-for-all.
www.computerworld.com/software

How Microsoft Fights Off 100,000 Attacks Per Month

NETWORKING: Here's what the company does to protect itself from the continuous onslaught of probes and intrusion attempts.
www.computerworld.com/networking

Lifetouch Gets It Right On Kids' Privacy

MANAGEMENT: Jay Cline takes a look at the school-photo company, which safeguards information while making it easier for officials to use its data to track down lost children.
www.computerworld.com/itmanagement

Certification Spotlight

Top Five Storage Certifications

STORAGE: Storage jobs are hot, and trained storage personnel are in short supply. Find out which positions are on the list of hot jobs for 2007.
www.computerworld.com/storage

This Is Not Just a Test

SECURITY: Columnist Jon Espenschied sits for yet another certification exam and ponders which components of a consultant's alphabet soup truly matter.
www.computerworld.com/security

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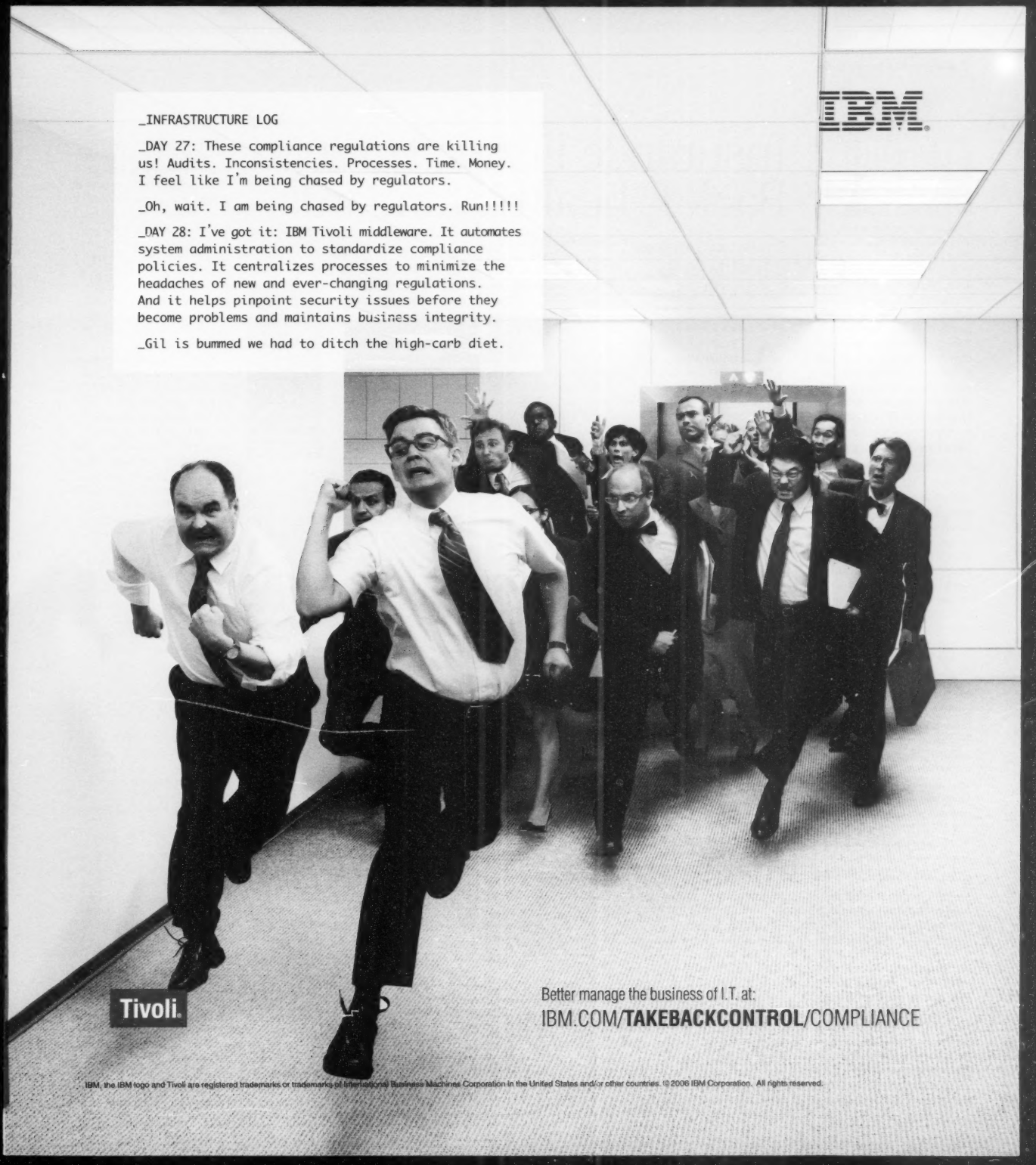
IBM
_INFRASTRUCTURE LOG
_DAY 27: These compliance regulations are killing us! Audits. Inconsistencies. Processes. Time. Money. I feel like I'm being chased by regulators.
_Oh, wait. I am being chased by regulators. Run!!!!!
_DAY 28: I've got it: IBM Tivoli middleware. It automates system administration to standardize compliance policies. It centralizes processes to minimize the headaches of new and ever-changing regulations. And it helps pinpoint security issues before they become problems and maintains business integrity.
_Gil is bummed we had to ditch the high-carb diet.
Tivoli.
Better manage the business of I.T. at:
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AT DEADLINE

Lawmakers Ask Hurd To Explain Trades

Two U.S. congressmen have asked Hewlett-Packard Co. CEO Mark Hurd to explain why he sold $1.37 million worth of HP stock just before the company's spying scandal became public in September. In a letter, Reps. John Dingell and Mark Stupak, both Michigan Democrats, called on Hurd to explain the stock sale by Dec. 21. A shareholder lawsuit filed last month also questioned the timing of Hurd's trade, along with trades by seven other HP executives.

Worker Sentenced for Planting 'Logic Bomb'

Roger Duronio, a former UBS PaineWebber employee, was sentenced to eight years in prison for planting a "logic bomb" on company networks to force a decline in the company's stock price. The scheme backfired when UBS stock remained stable after the attack, and Duronio lost more than $23,000. He had planted malicious code into about 1,000 computers that began deleting files on March 4, 2002.

HP, Microsoft Sign Joint Marketing Pact

Hewlett-Packard and Microsoft Corp. have signed a three-year, $300 million contract to jointly market bundled products to large companies. They said the collaboration will generate 30 new products and services in the next year that will be marketed to 20,000 shared HP-Microsoft customers.

Judge Delays Law to Track Drug Products

A federal judge has issued a preliminary injunction preventing the U.S. Food and Drug Administration from enforcing regulations requiring pharmaceutical companies to document the chain of custody for drug products by using RFID tags or other technologies. Ten pharmaceutical distributors that object to the Prescription Drug Marketing Act, which the FDA had planned to begin enforcing on Dec. 1, sought the injunction in a lawsuit filed this month.

Insurance Firms Agree to Back E-health Standards

To create personal e-health records for 200M clients

BY HEATHER HAVENSTEIN

A TRADE association representing almost 1,300 insurance companies with 200 million customers announced last week that all of its members have agreed to support a common set of standards for creating and managing electronic personal health records.

America's Health Insurance Plans (AHIP) compiled the standards with its largest member, the Blue Cross and Blue Shield Association.

SEROTA: All Blue Cross plans in the U.S. may offer PHRs by the end of 2008.

Scott Serota, president and CEO of the Chicago-based Blue Cross network, said that all 39 Blue Cross and Blue Shield plans in the U.S. are aiming to offer standards-based personal health records (PHR) to their 98 million clients by the end of 2008.

PHRs allow individuals to manage and view their own health information.

"Health plans have existing relationships with patients and providers, and we can help ensure widespread adoption and use [of PHRs] nationally," Serota said. "We need to have a seamless, interoperable nationwide system that will serve all members."

He said 13 of the Blue Cross plans have PHRs in place, and 12 others have plans under development.

The standards to be used by the insurers were gathered from the federal Health Insurance Portability and Accountability Act, the American National Standards Institute and the public/private American Health Information Community collaborative, officials said. The agreement allows companies to add unique features to the standards-based PHRs, officials said.

Claims Data to Play Role

Karen Ignagni, president and CEO of AHIP in Washington, said the companies will use insurance claims data to populate the PHRs. The claims data "can help patients record their experiences," she explained. "[It] allows test and lab [results] to be captured in a secure, Web-based environment."

Ron Williams, chairman, president and CEO of Aetna Inc., likened the effort to the development of common standards created by the banking industry for the ATM system.

The Hartford, Conn.-based insurer will begin offering PHRs based on the standards to about 1 million of its 15 million clients in February, Williams said. During the second quarter of next year, the company expects to offer personal electronic records to all of its customers, he said.

WILLIAMS: Aetna PHRs won't be used for insurance underwriting.

The Aetna PHR system will include an analysis engine that will compare patient treatment to best-practices guidelines and alert patients and physicians if they are not following the suggested procedures, Williams added.

He said that Aetna will not use data accumulated in the PHRs for insurance underwriting or risk evaluation.

Bill Marino, president and CEO of Horizon Blue Cross Blue Shield of New Jersey, said that his plan's first-generation PHR system, which was implemented in January, will be replaced early next year by a standards-based edition. Horizon provides insurance to 3.2 million clients, he said.

Marino said the company already provides radio frequency identification microchips that can be scanned to link with data contained in the PHRs of chronically ill patients in some areas of the state.

Health care officials said the electronic personal records are increasingly viewed as a way to reduce duplicate testing, medical errors and other problems that can lead to higher health care costs. The patient-controlled data allows consumers to share the data store with health care providers rather than depend on fragmented health history data maintained by multiple physicians and hospitals.

Liz Boehm, an analyst at Forrester Research Inc., said the agreement will allow workers to take their health data with them when they change jobs but noted that it doesn't address privacy issues.

HHS Set to Begin E-health Network Trials

The U.S. Department of Health and Human Services this month announced plans to support trial implementations of architectures that could be used in developing a nationwide health information network (NHIN). In an interview last week, **John Loonsk**, director for interoperability and standards in HHS's Office of the National Coordinator for Health Information Technology, explained how the trials will work and how HHS is working directly with local and state health information exchange groups.

Q&A

What are the goals of the NHIN trials, and how will these trials work? This year, the NHIN initiative includes contracting with four consortia, each of which has three health care markets associated with it. The goal was to develop prototype architectures. That work will culminate in January with the presentation of these prototype architectures. Next year's work, which we're terming "trial implementations," is taking the next step toward getting a production network of networks, which will be the NHIN.

How will state and local health information exchanges participate in the trials? This year's work was with technology companies. We anticipate that the next step will directly engage state and regional health exchanges [that] have partnered with a technology [company].

Have you selected the exchanges that will take part in next year's effort? It is too early to know which ones or how many. We do not know what the budget will be next year, and that will factor into the equation. This will be an open request for proposals. We would anticipate the awards being made in the spring.

Have you determined the cost for the trials? It is too early for that. We have to go through the procurement process.

What are the main challenges you will face in the trials? One of the things that will be critical will be to ensure the secure exchange of data [between] health information exchanges and some specialty networks, and ensuring that personal health record activities are integrated into that picture. [Other challenges include] the use and fostering of secure and standards-based data exchange between health exchanges, to [input] personal health records of individuals as they desire to do so, and to connect the different health care provider sites.

– HEATHER HAVENSTEIN

_INFRASTRUCTURE LOG

_DAY 33: Our information is siloed. Unmanageable. People can't access the latest info to make decisions. Gil's resorted to giving everyone access to everything all at once.

_Monitors now outnumber humans 18 to 1.

_DAY 36: It's clear to me. We need an IBM Information On Demand middleware solution. Info will be liberated from the silos—available when we need it, whatever the format. Accurate and in context. Now we can make smarter decisions and deliver real business value.

_Access is a beautiful thing.

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BRIEFS

Retailers Fined for Illegal Software Use

Payless ShoeSource Inc. and Burlington Coat Factory Warehouse Corp. have paid fines to the Business Software Alliance for unlicensed software use. Payless paid $124,057 for using illegal copies of software from Adobe Systems Inc., Autodesk Inc., Borland Software Corp., Internet Security Systems Inc., McAfee Inc. and Symantec Corp. Burlington paid $300,000 for using unlicensed software from Microsoft Corp. and McAfee.

Microsoft Issues 7 Security Updates

Microsoft rolled out seven security updates this month, patching critical flaws in Internet Explorer, Windows Media Format and the Visual Studio 2005 development software. The patches address 11 bugs, including two in the Windows Media Player software. The company had planned to release only six patches in the monthly update, but it added a Windows Media Format update after reports of attacks on the software.

Wayman Plans to Retire as HP's CFO

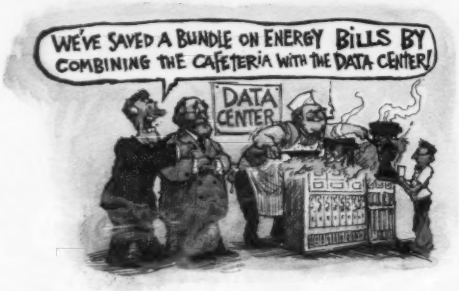
Bob Wayman is retiring as executive vice president and chief financial officer at Hewlett-Packard Co. at the end of this year, capping 37 years at the company. Wayman, 61, will be replaced by Cathie Lesjak, HP's treasurer and senior vice president. Wayman was interim CEO after the firing of Carly Fiorina.

Congress Passes Bill To Ban Pretexting

The U.S. Congress has passed a bill that would make it illegal to obtain a person's phone records without permission. The Law Enforcement and Phone Privacy Protection Act was spurred in part by revelations in September that Hewlett-Packard investigators had used deceptive means to gain access to phone records. The bill would allow those found guilty of pretexting to be imprisoned and fined.

ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL



MATTHEW FAULKNER

Blades Get the Blame, but . . .

. . . they aren't the only data center gear spiking temps and energy bills. Vikram Mehta, CEO of Blade Network Technologies Inc. in Santa Clara, Calif., thinks it's not quite fair for blade servers to catch all the heat in the struggle to keep a lid on the rising Fahrenheit in data centers. "Is anyone looking at the power consumed and the heat created by network gear?" he asks, arguing that it "is just as big of a problem as blades." Mehta suggests looking at the problem "holistically" by taking into account the network devices you won't need if you install a rack of blades. Plus, he points out that chip makers are now being guided by performance-per-watt metrics that should help reduce the energy consumption of computers, while blade vendors such as his company next year will unveil advances in board design, such as the elimination of network interface chips, that are also expected to result in lower power and heat liabilities. Networking companies don't seem to be under the same market pressure, and Mehta thinks that should change.

IT heat wave isn't just caused by blades, says MEHTA.

Intel packs its processors . . .

. . . with cool capabilities. Moore's Law continues to get a workout from computing's rapacious performance demands. But with microprocessor makers doubling the number of transistors in chips every 18 months or so, users might wonder, "Well, you have the horsepower and you have the real estate — what are you going to do with it?" Those are the words of Gregory Bryant, vice president and general manager of Intel Corp.'s digital office platform division. Bryant says Intel is already well along a path toward shifting to its processors functions that were once relegated to ASICs and even software. For example, Intel's multi-core vPro chip set already includes systems management functions that were once the purview of software, such as automatically taking a computer off the network to fix problems, then rebooting it, bringing it back online and reporting the events to a management console. In the first half of next year, Bryant says, Intel will consolidate even more functions onto vPro, adding intrusion-prevention technology and swallowing up keyboard, display and network tasks that now run separately on motherboards. Those advances will also help lower the energy needs of systems, he says. And that will be pretty cool, too.

BRYANT: More transistors bring more functions to processors.

Go to the head of the class and . . .

. . . get a jump on your IT career. Neumont University in South Jordan, Utah, won't be an odds-on favorite in any bowl games this season. But it just might put the odds in favor of its grads getting IT jobs, especially given that the accredited university only hands out undergrad diplomas in computer science. College president and co-founder Graham Doxey says that before the for-profit school was launched in 2004, he spent a lot of time talking with IT managers and software vendors to learn what skills they wanted from newly minted IT workers. Java geniuses? Microsoft marvels? Network know-it-alls? Nope. Doxey relates that the top two talents sought were the ability to collaborate and communication skills. As a result, Neumont's curriculum deviates mightily from that of most colleges. For one thing, school begins at 8 a.m. and ends at 5 p.m. Plus, students "work in teams from Day One," Doxey says. And classes revolve around real work, he adds, pointing to Neumont's PHP JetView open-source project as well as development projects that have been done for the likes of Novell Inc. and Microsoft Corp. Given the daily class schedule, students graduate in eight quarters. Currently, 300 are enrolled, and the average age is 24. Doxey claims that 86 Neumont grads entered the workforce this year with two job offers apiece and an average starting salary of $60,000. He says his only disappointment is not having more women in the program. Tuition is $9,000 per quarter. In 2007, Neumont hopes to get accredited for a master's in computer science.

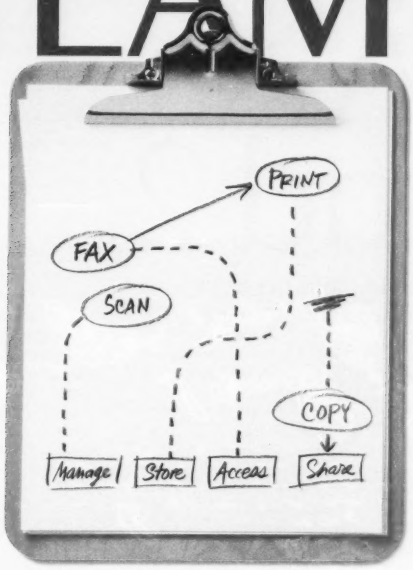
9:1
Ratio of men to women at Neumont University.

Hammer-and-nail crowd should use . . .

. . . less paper with Windows Vista. Architects, builders and contractors are awash in "tons and tons and tons of paper being moved around" during construction projects, says Kevin Wandryk, a senior director at Autodesk Inc. in San Rafael, Calif. But Windows Vista includes support for Autodesk's Design Web Format as a native file type. According to Wandryk, that means Vista users will be able to view Autodesk files whether they're running the company's apps or not. He says ubiquitous DWF file viewing will greatly improve a project's workflow by eliminating the need for a lot of paper exchanges. And in reciprocal mode, Autodesk will start supporting Microsoft's XML Paper Specification document format as a standard in its Design Review software in Q1 of 2007. ▸

WANDRYK: Stop passing around papers and start building things.

TEAM PLAYER



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Wireless LANs Reach Round 2

BY MATT HAMBLEN

New technologies create potential to expand network uses; cost, security concerns may slow some upgrades

WIRELESS LANs have grown in the workplace — in size, number of installations and technology maturity — to the point that many IT managers now expect to expand the uses of their networks in a new round of investments within the next year or two.

Expansion plans include providing users with significantly increased bandwidth via the proposed 802.11n standard and deploying dual-mode phones that support both voice-over-Wi-Fi and cellular calls, according to interviews with 10 IT managers who run WLANs at companies, medical facilities and universities.

> "It's a lot of hardware change, and not something we're fired up about."
>
> DOUG HILL, CHIEF NETWORK ARCHITECT, THE BOEING CO., ON UPGRADING WI-FI NETWORKS TO THE 802.11N STANDARD

But not everyone is ready to take the plunge. Some of the IT managers said hardware upgrade costs and lingering concerns about wireless security will put a damper on the addition of features to their WLANs. And several analysts voiced doubts about how quickly large companies will adopt 802.11n, dual-mode phones and other upcoming wireless innovations.

Pushing Ahead

BP PLC is among the companies looking to push ahead with wireless technology. An estimated 50,000 office workers at BP already have WLAN access. Now the London-based petroleum company plans a "second round" of projects, including the addition of separate wireless access support for visitors and contractors, said Curt Smith, BP's director of application technologies.

BP is also undertaking a major wireless expansion at its refineries, production facilities and offshore drilling platforms, Smith said. Thus far, the company has installed wireless access points in two of 14 refineries, and it is starting to deploy mobile Wi-Fi hot spots on 500 trucks used by workers who service pipelines.

In addition, BP will start one or two tests of WiMax technology next year, probably at a refinery and a large oil field, Smith said. WiMax is expected to provide throughput of up to 15Mbit/sec. on mobile deployments and 40Mbit/sec. for fixed or portable applications, and it doesn't require end-user devices to have a direct line of sight to a base station.

BP hopes the technology could provide a less expensive alternative to installing more wireless access points, Smith said. He noted that access points can cost $5,000 apiece, a steep price given the complexities of installations at industrial sites, where up to 100 of the devices may be required to get suitable coverage now.

Wireless quality-of-service and security standards that were adopted last year have begun to give IT managers more confidence about the technology, helping to drive interest in pushing WLANs into new areas. Another highly sought-after standard is 802.11n, which could increase Wi-Fi throughput to up to 200Mbit/sec. — about four times what is possible now. The Institute of Electrical and Electronics Engineers is expected to ratify 802.11n in early 2008, according to a project timeline page on the IEEE's Web site.

WLANs are "growing and progressing fairly rapidly," making it "extremely important" for users to have access to the performance promised by 802.11n, said Brad Sandt, lead network engineer at the Park Hill School District in Parkville, Mo. Sandt said that because WLANs are shared networks, adding more users results in slower throughput, "so any additional bandwidth is greatly welcomed."

But Park Hill just installed a WLAN based on the current 802.11g technology in August. Sandt said he worries that upgrading the network, which has 725 access points, to 802.11n would cost too much too soon for the school district.

Sandt said he is also looking forward to installing dual-mode voice technology that supports both wireless and cellular calls. Most of Park Hill's administrative staffers have to carry two or three devices to stay connected now, he said, whereas dual-mode phones could be used to make calls over the WLAN when workers were within its range and then convert to regular cellular service when necessary.

Seamless communications between Wi-Fi and cellular installations is one of the goals of a $300 million network convergence project that the University of Pittsburgh Medical Center announced last month.

As part of the project, UPMC plans to provide dual-mode handsets to up to 3,300 workers, said Bill Hanna, the medical center's vice president of IT infrastructure.

UPMC operates 19 hospitals and about 400 doctors' offices and other outpatient sites. Hanna said the dual-mode capabilities should help doctors and nurses as they move between buildings, since cellular service isn't always effective in the mountainous region around Pittsburgh. Conversely, they could use cellular connections in areas where the health care provider didn't have Wi-Fi links, he said.

As part of a technology trial, about 50 workers at Anthony Marano Co., a fruit and produce distributor in Chicago, for the past 18 months have been using dual-mode phones made by Motorola Inc. Chris Nowak, the distributor's IT director, said the phones have provided "substantial productivity gains" by letting users roam throughout the company's WLAN-equipped warehouse and continue talk-

Wireless Becomes Big LAN on Campus

MUCH OF the pressure to expand the uses of wireless LANs is coming from consumers who have grown accustomed to using free Wi-Fi hot spots, especially college students who want access to technology as they move from their dormitories to classrooms and nearby coffee shops.

"We have to have Wi-Fi as a university, or the students complain," said Roger Daniel, director of network infrastructure at North Carolina Central University. To support its 8,000 students, the school has installed about 300 wireless access points indoors and another 20 outdoors in a ruggedized 802.11 mesh network.

"There's big demand for Wi-Fi, partly from [users of] the new gadgets – the Palms and Pocket PCs and more," Daniel said.

In addition, the university is using its Wi-Fi network to pump video feeds to end users and to receive images from security cameras that are located in remote areas where it would be arduous to run wired connections.

Daniel said that the university is testing voice over Wi-Fi and that dual-mode handsets likely will become a technology that warrants investigation within the next two years. "We sit in Research Triangle Park, with Duke, Chapel Hill and other universities nearby, so pretty much we have to keep up with the Joneses," he noted.

The Alamo Community College District (ACCD), a group of five colleges in San Antonio, has deployed 477 access points to serve about 50,000 students and 6,000 staff members, said Arne Saustrup, the district's IT operations manager.

Going forward, "the WLAN will be standard infrastructure in all ACCD buildings," Saustrup said.

He added that he expects "rapid growth" in the number of wireless users over the next two years and that the district eventually will support dual-mode phones. "We see Wi-Fi voice as a collateral benefit [for users]," Saustrup said.

– MATT HAMBLEN

ing on a cellular network if they go outside to examine a delivery truck.

Nowak isn't fully satisfied with the current dual-mode phones, though. He said he'd like to see a model that has a better display and is less expensive so he could give the phones to more users (see story, this page).

Motorola is working on a new dual-mode handset for customers such as Marano, said Kevin Goulet, director of product management at the vendor's enterprise mobility solutions group. But, he added, Motorola has learned from trials at Marano and other sites that most workers don't need dual-mode capabilities and would prefer handhelds supporting data and voice for WLAN use only.

At least a dozen dual-mode phones have been introduced by vendors. But the big question for potential users is how to provide security for handoffs from WLANs to cellular and back again, especially when public Wi-Fi hot spots are involved, analysts said.

The Boeing Co. is a case in point. The aircraft maker has made a major commitment to WLAN technology for more than four years and currently has about 3,000 access points installed in plants and offices in 48 states, said Allen Ballinger, senior manager of distributed networks integration at Boeing. The highest concentrations of access points are on manufacturing floors, where pulling Ethernet cable into cramped locations would be impractical, Ballinger said.

SMITH: BP plans a "second round" of WLAN investments.

But Cliff Naughton, Boeing's director of network services, said the company is "very security-conscious," which governs how it will extend the uses of its WLANs. With dual-mode phones, a wireless carrier would have to support roaming onto corporate networks and vice versa, which is "extremely complicated," Naughton said. "It gets kind of onerous. We will not be fielding production applications until we feel confident."

UPMC will give 3,300 workers dual-mode phones that support calls via both wireless and cellular networks, according to HANNA.

In the near term, adding voice over Wi-Fi by itself "is more viable," said Doug Hill, chief network architect and an associate technical fellow at Boeing. Even so, he added, some strict rules will need to be applied to keep voice quality high, especially with so many WLAN users. He also cited concerns that transmissions from radio frequency identification tags on a separate network might interfere with Wi-Fi voice calls.

As for expanding wireless bandwidth with 802.11n, Hill said Boeing isn't interested in installing thousands of new access points until well after 2008. "It's a lot of hardware change, and not something we're fired up about," he said.

Naughton said Boeing has talked with vendors about where it might be able to take advantage of WiMax and ZigBee, an emerging wireless technology for monitoring and controlling the temperature, lighting and security of buildings. But he said it likely will be "quite a long time" before Boeing is interested in putting ZigBee-based capabilities into buildings, partly because the company is consolidating its manufacturing and office space, not expanding it.

Paul DeBeasi, a Burton Group analyst in Milford, Mass., said that with the addition of 802.11n and other standards being developed for functions such as roaming and wireless network management, "Wi-Fi will be really reliable, predictable and high performance." It's hard to forecast, though, when those standards will be adopted by users, he added.

Gartner Inc. analyst Philip Redman predicted that 802.11n-based technology won't be widely installed until 2012, even if the IEEE meets its current schedule for approving the proposed standard.

And Bob Egan, an analyst at TowerGroup in Needham, Mass., said he thinks security concerns will continue to haunt Wi-Fi networks and limit their growth, particularly among large companies. "WLANs have had a very hype-driven ramp-up in homes, hot spots and municipal networks, and only certain parts of the business," Egan said.

At some companies, WLANs have become so commonplace that many workers never need to use wired connections anymore. For example, about 5,000 workers at Intel Corp.'s Jones Farm office campus near Portland, Ore., rely on a WLAN "for mission-critical uses and use it as their primary network," said Brian Tucker, Intel's mobile marketing manager. "The majority do fine on wireless."

Not a Full Replacement

Intel is working with Cisco Systems Inc. to promote next-generation uses for WLANs, and the chip maker has announced plans to release a Centrino mobile chip with 802.11n support in the first half of 2007, without waiting for the IEEE to approve the standard.

But Tucker acknowledged that WLANs are "not a replacement for Ethernet across all users." He cited large number-crunching applications as one area where wireless networks fall short.

Roger Daniel, director of network infrastructure at North Carolina Central University in Durham, said the school uses a large wireless mesh network for applications such as transmitting video feeds to end users. It also is starting to test voice over Wi-Fi (see story, page 10).

But, Daniel said, "Wi-Fi will never replace our wired LAN, and we're taking Gigabit Ethernet to each desktop, so 100 or more megabits over wireless doesn't mean that much by comparison." Wi-Fi's primary value, he added, is that it provides "anytime access" to data and serves as "a cost-effective way of extending the LAN to the users."

Nurses at WakeMed Health & Hospitals in Raleigh, N.C., could benefit from having dual-mode phones, which would be easier to carry than the separate voice-over-Wi-Fi handsets and cellular phones now used by about 500 medical workers, said John Tuman, director of network services at WakeMed.

Tuman also wants to use RFID tags to keep track of medical equipment and transmit the data generated by the tags via his Wi-Fi network. But the dual-mode and RFID technologies are just wish-list items for now, he said. ▸

Dual-Mode Phones Nourish Food Distributor's Sales

AT ANTHONY MARANO CO., sales personnel serve a dual role as buyers of the fruit and produce it distributes. And they now use dual-mode mobile phones, which work on both a wireless LAN inside the company's Chicago facility and a Cingular Wireless cellular network outside the building.

The phones and the network underpinnings for the dual-mode technology have been used in full production mode by about 50 employees for the past 18 months, said Chris Nowak, Marano's IT director. The wireless system is based on trial technology from three vendors: phone maker Motorola Inc.; Avaya Inc., which supplied switching equipment; and Proxim Wireless Corp., which provided the wireless access points and related software.

NOWAK: "If we figured it out, others can."

Workers equipped with the phones can walk around Marano's 400,000-square-foot warehouse to check on produce shipments and connect to the company's WLAN through 72 access points. If they need to go outside, they can continue talking over the cellular network, according to Nowak.

"No one wants to charge two batteries, have two voice passwords, two voice mail systems and two telephone numbers," he said.

The handoff between the networks is "just an insignificant blip," Nowak said. And, he claimed, "the sound quality is better than on desk phones."

Marano's sales have increased 15% since the dual-mode technology was deployed, without any increase in the number of sales workers, Nowak said. He cited the addition of the phones as the main reason for the sales growth.

But there is room for improvement in the handset, Nowak added. He said a better display could enable workers to use their phones to view photographs of produce being offered for sale by growers. Currently, growers can send images, but buyers must go to a PC to look at the pictures.

Also, Nowak said he could double the number of users if the price of the dual-mode phones dropped substantially below the current cost of $600 per handset.

Kevin Goulet, director of product management at Motorola's enterprise mobility solutions group, wouldn't disclose any details about the new dual-mode handset that the company is developing. But Goulet said he thinks Nowak will be happy with the phone's price and expanded capabilities.

Nowak said he expects dual-mode technology to grow only more valuable for business users.

"Everyone is going to have this technology," he said. "We're doing great on it, and we're not even a technology company. We just sell fruits and vegetables. If we figured it out, others can."

– MATT HAMBLEN

GLOBAL DISPATCHES An International IT News Digest

Regulators Cast Wide Net in LCD Probes

TOKYO

PROBES UNDER WAY by Japanese, South Korean, European Union and U.S. government agencies of possible anticompetitive behavior by makers of flat-panel displays became public last week, as five vendors disclosed that they had been contacted by investigators.

LG.Philips LCD Co. in Seoul said last Monday that it had been subpoenaed on Dec. 8 by regulators in the U.S., South Korea and Japan. A day later, Samsung Electronics Co. in Seoul made a similar disclosure, while Sharp Corp. in Osaka, Japan, and AU Optronics Corp. in Hsinchu, Taiwan, both said they had been contacted by the Japan Fair Trade Commission and the U.S. Department of Justice. In addition, Chi Mei Optoelectronics Corp. in Sinshih, Taiwan, said a U.S. subsidiary had been contacted by the DOJ.

The European Commission confirmed that it has begun a similar probe.

According to Samsung, the investigations center on possible price fixing of thin-film transistor LCDs used in products such as computer monitors, laptop PCs, cell phones and digital music players.

■ MARTYN WILLIAMS AND PAUL MELLER, IDG NEWS SERVICE

GLOBAL FACT

82.4%

Projected compound annual growth rate in spending on radio frequency identification applications in China between last year – when the market totaled an estimated 1.477 billion renminbi ($192 million U.S.) – and 2010.

SOURCE: IDC, FRAMINGHAM, MASS.

Military CIO Confirms IT Support Problems

CANBERRA, AUSTRALIA

JOHN MONAGHAN, CIO and air vice marshal for Australia's Department of Defence, acknowledged problems with the agency's IT support levels, during a hearing held last month by the Australian Senate's Foreign Affairs, Defence and Trade Committee.

At the hearing, Monaghan was asked whether there was a backlog of 6,000 support requests and if the requests were taking up to a month to process earlier this year. He confirmed the backlog number but said it had been reduced to about 5,000 requests since the support problems were detailed by *Computerworld Australia* in August.

Monaghan said support workers will turn "their full attention to reducing the backlog to a reasonable level" once an agencywide rollout of Windows XP is completed. He added that the problems involve services provided by regional IT units within the department, not Sydney-based Kaz Group Pty., which was awarded a five-year support contract last year.

■ RODNEY GEDDA, COMPUTERWORLD AUSTRALIA

Asian Vendors Forming DRAM Joint Venture

TAIPEI

ELPIDA MEMORY INC. in Tokyo and Powerchip Semiconductor Corp. in Hsinchu, Taiwan, this month announced plans to jointly build four dynamic RAM factories in Taiwan over the next five years.

The two companies said they plan to invest a total of 452 billion New Taiwan dollars ($13.9 billion U.S.) in a joint venture, which will begin operating early next year in a DRAM plant that Powerchip had already started building in the city of Taichung.

The other three factories will also be built in Taichung and give the joint venture a combined manufacturing capacity of about 240,000 silicon wafers per month.

■ DAN NYSTEDT, IDG NEWS SERVICE

Compiled by Mike Bucken.

Briefly Noted

The International Telecommunication Union said attendance at ITU Telecom World 2006 in Hong Kong this month totaled 49,210 – far lower than in previous years. But organizers at the Geneva-based ITU noted that the conference was the first it has held outside of Europe. They also said the event met the ITU's forecast of between 42,000 and 57,000 attendees.

■ SUMNER LEMON, IDG NEWS SERVICE

Fujitsu Siemens Computers GmbH in Maarssen, Netherlands, last week brought out a packaged storage-area network offering aimed at small and midsize businesses. The bundle includes RAID storage devices made by Fujitsu Siemens, switches from Brocade Communications Systems Inc. and host bus adapters from Emulex Corp. Pricing starts at €8,000 ($10,600 U.S.).

■ NANCY GOHRING, IDG NEWS SERVICE

AOL LLC's planned sale of its Internet access business in the U.K. to London-based The Carphone Warehouse Group PLC was approved Dec. 8 by the European Commission. In addition to the U.K. deal, AOL has sold off its Internet access unit in France and agreed to sell its business in Germany because of declines in its European subscriber numbers.

■ PAUL MELLER, IDG NEWS SERVICE

Selloff Plans, Fraud Probe Put Spotlight on Siemens

BY MATT HAMBLEN

Siemens Communications Inc. last week announced a sleek line of desktop phones, but several analysts warned IT managers to be cautious buyers because parent company Siemens AG may sell off its enterprise networking unit.

In addition, the networking unit could be tainted by an ongoing criminal investigation into alleged fraud and bribery involving employees at the company's telecommunications network operation in Germany. The workers may have skimmed more than €420 million ($553 million U.S.) from Siemens since 1999, according to company officials and German authorities.

Fallout from the probe continued last week when Nokia Corp. announced that it is delaying the planned launch of a joint venture combining its telecommunications network unit with the one at Siemens.

The joint venture was supposed to begin operations in January. Nokia said it now expects the launch to take place later in the first quarter, subject to a further agreement on "the results and consequences" of an internal review planned by Siemens.

The enterprise and telecommunications network units at Siemens are part of the same operating group, although they were split into separate subsidiaries Oct. 1 as part of an effort to find buyers or business partners for them.

Analysts said potential users of the OpenStage phones that were announced last week by Siemens Communications — the U.S. arm of the enterprise networks unit — should scrutinize the company's business prospects as much as the new technology itself. "You know where Siemens is today, but [not] in two to three years," said Allan Sulkin, an analyst at TEQConsult Group in Hackensack, N.J.

But America-Mideast Educational & Training Services Inc. plans to deploy 40 new phones next month, said Ugur Usumi, director of information technologies at the Washington-based company. Usumi said the fraud investigation probably won't influence future decisions about whether to buy from Siemens, though a sale of the enterprise networks unit might affect his purchasing plans.

The OpenPath phones include an iPod-like scroll wheel.

Bill Crane, communications manager at bicycle maker Shimano Inc. in Irvine, Calif., said he will proceed with a test of the new OpenStage phones. Crane added that he isn't worried about the possible effect a sale of the Siemens unit could have on support or product plans. As for the fraud investigation, he said he would "be more concerned about the stupidity of the people involved than its impact on the company's future."

Siemens said its four new phones use the Session Initiation Protocol to integrate features such as desktop call management and push-to-conference functionality for wired, wireless and IP-based communications. A TouchGuide wheel on the front of each phone somewhat mimics the scroll wheel on iPod music players and offers access to a menu-driven user interface.

Nora Freedman, an analyst at IDC, said the new phones add some "bling" to end-user desktops but don't contain features that distinguish them much from the IP phones sold by competitors such as Cisco Systems Inc., Avaya Inc. and Nortel Networks Ltd. ▸

For all stories go to www.microsoft.com/getthefacts

Microsoft

The Highly Reliable Times

VOLUME 1 – ISSUE 1

Windows Server 2003

LONDON STOCK EXCHANGE CHOOSES WINDOWS OVER LINUX FOR RELIABILITY

Tom Nagy for The Highly Reliable Times

THE HEADQUARTERS BUILDING of the London Stock Exchange, located in London's Paternoster Square.

Reliability Is Key in the "World's Capital Market"

By MICHAEL BETTENDORF

LONDON, Oct. 2006 — When an IT system must process 15 million real-time messages per day, with peaks at 2,000 messages per second, even one second of downtime counts. That's the pressure the London Stock Exchange faced when building Infolect, the Exchange's real-time stock-ticker information delivery system.

The solution had to have rock-solid reliability, nothing less. "Reliability is one of the key attributes of the Exchange in its technology systems. These systems have to work every day, 24/7, to make sure the markets are there," said CIO David Lester, who evaluated both Linux and Microsoft® Windows Server® 2003 for the Exchange's core technology systems. "We looked at a number of different platforms for our Technology Roadmap, and we lined up our business requirements with the capabilities of those platforms, and Windows Server was the clear choice."

In Lester's view, long-term reliability is a function of a solid relationship: "We wanted a deep partnership with an organization that could deliver the kind of mission-critical technology that we needed, and we felt Microsoft delivered just that."

For the full London Stock Exchange case study, plus other case studies and independent research findings on the reliability of Windows Server versus Linux, visit us at microsoft.com/getthefacts

LESTER SPEAKS OUT:

"We looked at a number of different platforms for our Technology Roadmap, and we lined up our business requirements with the capabilities of those platforms, and Windows Server was the clear choice."

–David Lester, CIO, London Stock Exchange

BREAKING NEWS: London Stock Exchange Achieves Record Reliability

David Lester, Chief Information Officer of the London Stock Exchange, cites Windows Server as key to maintaining system reliability and performance. *— Continued on Page B3.*

Payroll Problems Plague $25M PeopleSoft Rollout

BY MARC L. SONGINI

HIGH-PROFILE payroll problems have plagued a $25 million PeopleSoft ERP implementation in the Palm Beach County School District in Florida after just five months of operation.

Since the Oracle Corp. software went live in July, there have been numerous instances of employees being underpaid or not paid at all, said Mike Guay, a Carlsbad, Calif.-based consultant hired in early September to help fix the problems.

In many cases, the payroll errors have caused significant hardship to workers, added Sharon Barmory-Munley, president of the local office of the National Conference of Firemen & Oilers, a union representing more than 4,000 school district employees.

In September, payroll problems prompted some 300 bus drivers to picket the school board. Other employees have complained to the U.S. Department of Labor, said Barmory-Munley.

"It's horrible," she said. "Some people can't pay their bills, mortgage payments are late, and they've ruined their credit. This is disastrous."

Some workers haven't received overtime pay since July because of problems with the software, she added.

"Of course we'd like to see it fixed," Barmory-Munley said. "In the future, if the district does a project like this, the personnel better do a lot of research as to how the system was applied and what the outcome was at other public entities."

Problems Waning

The district began installing the PeopleSoft software in April 2005, replacing a mix of internally built payroll, human resources and benefits systems that were more than 10 years old, according to Guay.

In a statement, school district officials declined to discuss the reasons for the payroll problems but defended the PeopleSoft rollout.

In an e-mail response to questions from *Computerworld*, Joseph Moore, the school district's chief operating officer, said that software glitches affecting the payroll system have mostly been fixed. He noted that most of the problems occurred between July and September, with the number declining significantly since then.

Moore did say the scheduled October completion of the project has been delayed until the first quarter of 2007, but he predicted that it will remain within its $25 million budget.

Guay said that the glitches never affected more than 10% of district employees at any time. "There are 23,000 employees, and the problems affected only 2,300 checks" in September, he said. However, he did acknowledge that "the problems were pretty severe. The people that could afford it the least were hurt the [most]."

A status report of the PeopleSoft project on the district's Web site said that 10% of employees were affected by payroll problems in September, 5% in November and 4% so far in December.

He added that the payroll problems overshadowed improvements in the district's human resources and financial operations that were made possible by the PeopleSoft software.

Guay declined to disclose specific reasons for the payroll problems, but he did acknowledge that there were technical issues.

He also noted that the district's needs are "incredibly complex" because some individuals are paid as teachers, consultants and coaches, and the payroll system also has to reflect complex arrangements that are required under union contracts.

In his statement, Moore said "there are some areas where we still need additional [external] support to be completely self-sufficient." He said he expects the system to be completely fixed by next March.

Moore noted that the problems with the PeopleSoft implementation will lead to new procedures for the next major software purchase. "We would test some of the application areas more thoroughly and plan more time for training and knowledge transfer prior to the go-live," he said.

Officials from the Palm Beach County school board did not respond to request for comment on the problems.

Kevin Curry, vice president for Oracle's public sector unit, said that the company has "committed additional resources to remedy the situation." ▸

Continued from page 1

Denver Vote

registered voters in Denver, which has replaced traditional precinct polling places with "voting centers" where any resident can cast a ballot, regardless of where he lives. The software was designed to help poll workers make sure that people hadn't already voted at other centers during the check-in process.

But, Hessler and Smith wrote, "due to unnecessary and progressive consumption of system resources, the application's performance will gradually degrade in a limited-use environment and will be immediately and noticeably hampered with a high number of concurrent users."

Web sessions launched within ePollBook remain open unless poll workers click an "exit" button to close the application, the consultants said in their report. But they added that according to activity logs generated on Election Day, 90% of user sessions were ended by simply closing the browser window. That left the sessions running and tied up system resources, causing the performance slowdowns.

EXCERPT

> **"The ePollBook is a poorly designed and fundamentally flawed application that demonstrates little familiarity with basic tenets of Web development."**
>
> FROM THE FUJITSU CONSULTING REPORT ON THE VOTING PROBLEMS IN DENVER LAST MONTH

Hessler and Smith also said it appears that the DEC and Sequoia did no stress testing of ePollBook, other than using the software in last spring's primary election as a trial run. Performance problems during the primary should been taken as warning signs that the software needed to be improved before the general election, the consultants wrote.

Also troubling, they added, is that the application and its underlying SQL Server 2000 database share a Dell server instead of running on separate systems — a setup that would have improved performance, security and redundancy, the consultants said.

The DEC chose the $85,000 Sequoia-developed application over poll book software that is being used in Colorado's Larimer County and has been offered to other counties at no cost. The Larimer application uses a server-resident Microsoft Access client and an Oracle database installed on a dedicated server, as well as five application servers. Hessler and Smith recommended that the DEC either have the Sequoia application repaired or take another look at the Larimer software to see if it could be used in Denver.

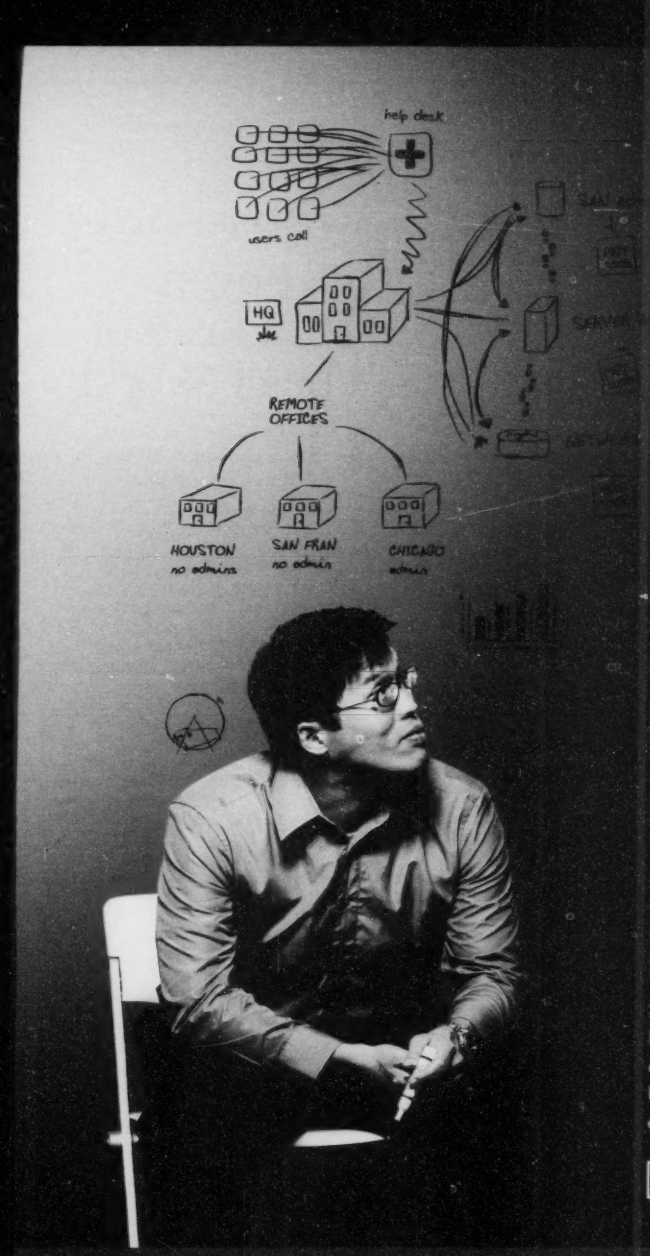
Michelle Shafer, a spokeswoman for Oakland, Calif.-based Sequoia, declined to comment on the report in an e-mail response to questions. "While we may disagree with opinions expressed by the authors of this report, our focus is on helping Denver solve their problems," she wrote.

In addition to the software issues, the report cited three major problems within the DEC's IT department: "generally substandard" IT operations and management, "dysfunctional communications" between IT managers and other leaders, and "a general and pervasive insufficiency of oversight, due diligence, and quality assurance."

The DEC "agrees with 99% of the report" and will take action to resolve the problems, said Alton Dillard, a spokesman for the commission. "The ePollBook was the choke point, but there are some other things that need to be addressed," he added.

The three-member commission is scheduled to meet tomorrow to decide how to handle next year's local elections. Dillard said three options are under consideration, including the use of mailed ballots for all voters, a return to precinct voting, or continued use of the voting center approach while fixing or replacing ePollBook.

"Clearly, the technology component of the election commission is pretty broken right now," said Chris Henderson, chief operating officer for the city of Denver. The DEC is an independent body, and "it's the election commission's business to sort out those questions," Henderson said. But he added that he hopes the DEC looks seriously at the other recommendations in the consultants' report, including a call for the commission to take advantage of the city's IT staff and system resources. ▸



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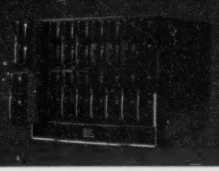

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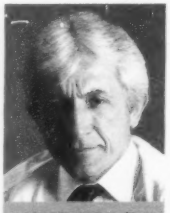
DON TENNANT

The Ultimate Gift

YOU'VE probably seen the Apple TV commercial in which the goofy PC guy and the cool Mac guy exchange holiday gifts. The Mac guy's gift to the PC guy is a book of photos of the duo's encounters. The PC guy's gift to the Mac guy is a frighteningly thick book titled *C++ GUI Programming Guide*. It's absolutely priceless.



DON TENNANT is editor in chief of *Computerworld*. Contact him at **don_tennant@computerworld.com**.

In real life, it was a PC guy who gave the Mac guys what they always wanted this holiday season. The gift came in the form of a three-year-old e-mail in which a member of Microsoft's "senior leadership team" proclaimed, "I would buy a Mac today if I was not working at Microsoft." No doubt, the Mac guys received that gift with the glee of a 6-year-old who finally got a pony.

The e-mail, dated Jan. 7, 2004, and presented as evidence earlier this month in the case of *Comes v. Microsoft Corp.*, an antitrust trial in Iowa, was written by James Allchin, co-president of Microsoft's platforms and services division. It was directed to Bill Gates and Steve Ballmer, and it held nothing back.

"I'm not sure how the company lost sight of what matters to our customers . . . but in my view we lost our way," Allchin railed. "I think our teams lost sight of what bug-free means, what resilience means, what full scenarios mean, what security means. . . ."

We in the media naturally jumped all over the remarks, and last week Allchin was compelled to explain himself on the Windows Vista team blog.

"It was a rant encouraging a change to the way we were building Windows at the time," Allchin wrote. "I was being purposefully dramatic in order to drive home a point . . . that we needed to change and change quickly."

Allchin will leave Microsoft next month in a departure that will coincide closely with the long-delayed launch of Vista on Jan. 30. You have to wonder how his 16-year career at Microsoft will now be remembered. Will he be forever branded as the PC guy who gave the Mac guys the ultimate gift?

I've had only one encounter with Allchin during those 16 years, but it was enough to make me hope he's treated more fairly than that.

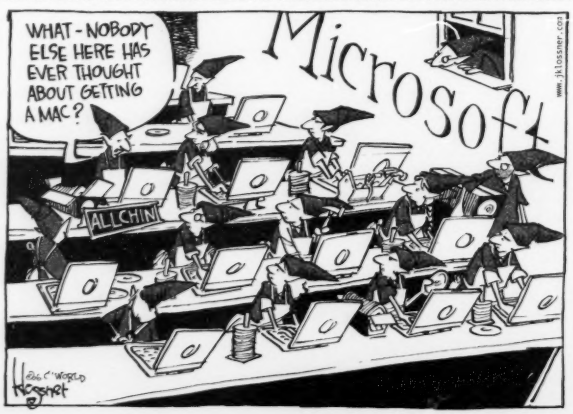
In August 2003, about four and a half months before Allchin sent that now-famous e-mail to Gates and Ballmer, *Computerworld*'s Carol Sliwa, Mark Hall and I met with Allchin at Microsoft's campus in Redmond. The timing could hardly have been more awkward for Allchin, who was spearheading the development of the critical next version of Windows, then code-named Longhorn. Microsoft and its users were reeling from the destructive effects of the Blaster worm, which had exploded onto the international scene just two weeks earlier.

What struck me at the outset of the meeting was that so many of the senior vendor executives I'd known over the years would have canceled such a meeting under the circumstances. As the meeting progressed, I was struck by Allchin's passion and sincerity. No excuses. No vendor-speak. He was clearly fed up. "I've had enough," he told us. "And I'm going to do something about it."

It was in that context that Allchin would fire off the e-mail to Gates and Ballmer that winter. In his blog posting last week, Allchin recounted what that frame of mind yielded. "We changed dramatically the development process that was being used," he wrote, "and we reset the Windows Vista development project in mid-2004, essentially starting over."

In the end, that change may prove to be the PC guy's ultimate gift. And the recipients won't be the Mac guys. ▸

Don Tennant



DAVID MOSCHELLA

Seven Paradoxes of The IT World

HAVING WRITTEN nearly 200 columns for *Computerworld* over the past eight years, it's time for me to sign off, at least for a while. Writing regularly from atop a powerful platform such as *Computerworld* can get in your blood, so letting go isn't easy. But I will always be grateful to everyone at *Computerworld* for letting me try my hand at this, especially my numerous, and invariably helpful, editors. Most of all, I would like to thank *Computerworld*'s readers for their countless thoughtful comments, and even their sometimes stinging critiques.

If there has been a primary focus of this column, it's been assessing the evolution of the technology industry and suggesting what it might mean for enterprise IT. Often, I have opted for an aerial perspective, with all the pros and cons such high-level vantages imply. For this final column, my colleagues and I have tried to synthesize the key forces shaping IT today. Our somewhat surprising conclusion is that we are now working through a period of heightened paradox. Here are seven worth pondering.

DAVID MOSCHELLA is global research director at the Leading Edge Forum, a Computer Sciences Corp. company. Contact him at **dmoschella@earthlink.net**.

1. Self-image. The IT industry likes to be liked and likes to think of itself as doing good in the world by enabling generally "green" progress. But because the success of our business is so closely tied to the rise of globalization, IT is often an easy target for globalization's many discontents. That the leadership of the IT industry is so dominated by U.S.-based companies makes our business especially vulnerable to the growing anti-Americanism in many parts of the world. Increasingly, IT is both respected and resented.

2. Market power. While it seems

indisputable that the Web has empowered consumers with better information and expanded choices, the fact remains that the growth of the Internet has coincided with steadily rising corporate profits. This suggests that the net of the Net has been to increase business — not consumer — market power, at least for now.

3. Spending. Although businesses are now awash in record levels of cash and rely on IT more than ever, there is little appetite for additional IT spending, at least not by the traditional IT organization. We are in a peculiar situation where IT often matters more than ever but many enterprise IT organizations remain in the corporate doghouse.

4. Complexity. Many businesses fear that they are drowning in complexity. IT often gets the blame because of its tendency to spur endless variations in products, customer segments, pricing, and sales and service options. But paradoxically, IT is also promoted as the solution because of its ability to standardize and reuse business processes and information. Tellingly, leading simplification approaches such as SOA and Web services are themselves highly complex endeavors.

5. Consumerization. In contrast to these growing thickets of enterprise complexity, consumer computing gets simpler and more powerful every day. We are rapidly moving toward another paradox, where enterprise IT is the most costly and sophisticated realm of computing but also the least modern and efficient. Increasingly, we can do things at home for free (2GB e-mail, anyone?) that companies, for all of their expert IT staffs and huge capital budgets, can't come close to matching.

6. Talent. The IT industry understandably worries about decreasing numbers of new U.S. computer science graduates. Yet despite this shortage, societal knowledge of IT is exploding, as IT permeates just about every profession — science, design, investing, entertainment — and as we all move up the IT learning curve in our own lives. The paradox is that while many people are fascinated by technology, they just don't want to study computer science and work in enterprise IT. Do they know something we don't?

7. Carr vs. Kurzweil. What could be more paradoxical than the fact that the two most influential IT books of the past few years have been Nicholas Carr's *Does IT Matter?* and Ray Kurzweil's *The Singularity Is Near*, which rejects Carr's message by predicting a dazzling future stemming from the growing intersection between IT, nanotechnology and biotechnology? One thing for sure is that they can't both be right.

Or can they? A philosopher might argue that paradoxes often result from the collision between traditional and emerging worlds, where what is true in the former can be false in the latter, and vice versa. This appears to describe today's IT environment, where the old world of complex, expensive, private enterprise infrastructure led by technicians is being challenged by a new world of standardized, inexpensive public infrastructure led by applications. During such shifts, things can easily be both true and false at the same time.

Through our work at the Leading Edge Forum, I will continue to try to unravel these issues. You can follow our research there (*www.lef.csc.com*), or perhaps someday again in these pages. Until then, thanks, farewell, and best of luck in 2007 and beyond. ▸

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READERS' LETTERS

WPF Isn't There Yet

DEVELOPERS LOVE WPF by all accounts? I am not sure what accounts you have been looking at ["Under the Hood: What's Different About Vista's GUI?" *Computerworld.com* book excerpt, Oct. 17], but I can assure you that many developers, including Microsoft's own, are concerned about using the first release of Windows Presentation Foundation. Did you ever ask why Vista does not ship with any significant components that actually *use* WPF? It is still not a fully trusted component of the operating system, and it is still not as fast as most developers would like. If you throw anything complex at it, it starts to chug. WPF is a major achievement, but please do not overemphasize its uptake or popularity. It is where .Net was five years ago. It will take five years to get to where .Net is now.

Laurence Parry
Software developer, Stardock, Plymouth, Mich.

Taking Stock of the E-voting Situation

THE BELIEF that keeping the source code for voting machines secret will enhance the security of these systems is false ["Diebold Source Code Leaked Again," *Computerworld.com*, Oct. 21]. This idea is called security by obscurity, and the only effect it will have is to slow the availability of computerized voting machines that are actually secure. And keep in mind that if the source code is exposed only once, we still have to assume that anyone could be in possession of it. In fact, since an exposure event could easily go undetected, we have to assume the source code is already in the hands of anyone who wants it badly enough.

The algorithms and source code for encryption algorithms are published publicly because it has been repeatedly shown that keeping them secret only hides weaknesses that will eventually be discovered.

The only way we can be assured the software is secure is to have it exposed to the harsh light of day, such as by adversarial examination, analysis and testing by experts in the software security field. Until voting machine software can withstand such scrutiny, we will not have a transparent and trustworthy replacement method for using electronic systems in our voting system.

Mark Walker
Systems administrator, Albuquerque, mw@swcp.com

IN THE age of commercial electronic banking, I find a lack of logic in Aviel Rubin's statement that hackers can rig a machine to print receipts that don't match the actual vote and that matching paper ballots to the database is a more difficult chore than advertised ["E-voting Technology Faces Critical Test," News, Oct. 23]. When I use my ATM card in a foreign country, not only is my account debited properly in U.S. dollars, but I can get cash at the current exchange rate. If I can go into any store in the country and most of the developed world, use a credit card, get a paper receipt and trust that my account will be debited properly and confidentially, then it is ludicrous to say that we cannot have efficient and safe e-elections.

Terry J. DuBose
Diagnostic Medical Sonography program director and associate professor, University of Arkansas for Medical Sciences, Little Rock, DuBoseTerryJ@UAMS.edu

On Age and Attitude

AS I approach my 45th birthday, I know that age is more an attitude than a number ["The Birth Date Excuse," Editorial, Oct. 16]. This lesson was learned in college 23 years ago, when I met a fellow student named Frank. Frank was everything that you'd expect a good computer science student to be: eager to learn and a voracious reader. The fact that he was 65 rarely entered the conversation, but when it did, it was profound. For instance, when asked why he was spending his golden years pursuing a degree in computer science, Frank would say that it was for his grandchildren. A year before, he had bought them a PC and quickly discovered that he was unable to answer their questions about how it worked, so he took a class. That class led to another, then to another and so on. Frank explained that he had rediscovered the joy of learning, essentially his very own version of the Fountain of Youth. Over the years, I've tried to emulate Frank, realizing the dangers of becoming too set in my ways. Starting with languages like BAL and C, progressing to Cobol and SQL and finally ending up with C#, XSL and PHP, I've kept learning. Four years ago, I even decided to branch out and try writing, and now I've written over 50 articles and a book on AJAX. Learning plays a big part in who I am now, and I owe my attitude to a 65-year-old computer science student named Frank.

Edmond Woychowsky
Software engineer, Wilson Boro, Pa., ewoychowsky@yahoo.com

TOO MANY of us fiftysomethings hang out only with other fiftysomethings and share war stories about the good old days. Age does not have to correlate with flexibility, adaptability or curiosity. These traits earmark successful people regardless of age, and the lack of these traits is a great predictor of failure.

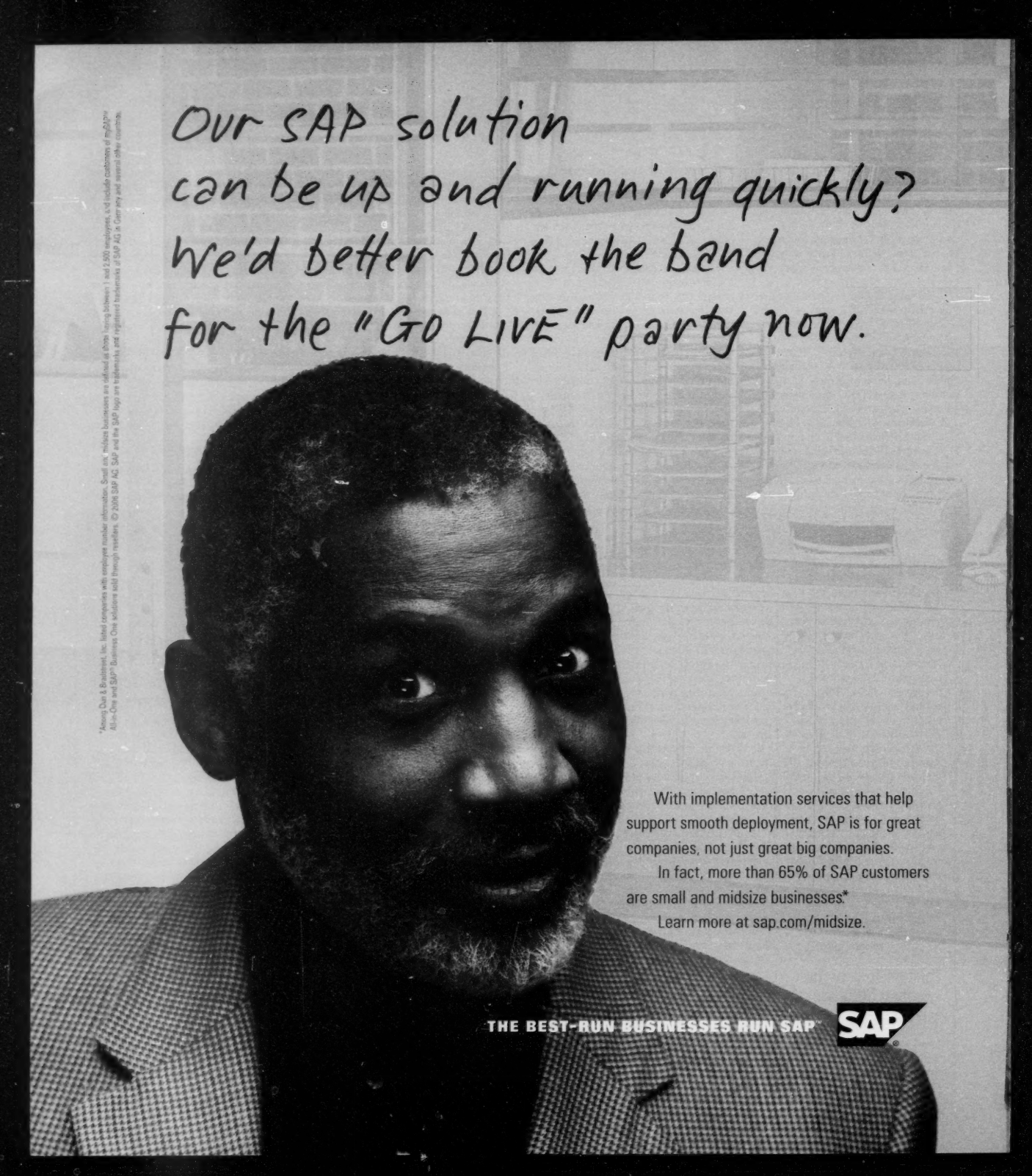
Lou Washington
Senior business manager, Cincom Systems Inc., Cincinnati, lwashington@cincom.com

SSO? Still One Too Many Passwords

SINGLE SIGN-ON is fine, but that does nothing for eliminating passwords; it just cuts them down to one ["Password: 0bs0l3t," Frankly Speaking, Oct. 23]. And biometrics are no help. *MythBusters* broke a supposedly infallible fingerprint reader with a photocopy of a thumbprint. And I'll keep my mouse, thank you. Maybe a stylus makes sense for a Palm Treo or a tablet PC, but I don't care to reach across my desk to poke my monitor. Who needs carpal shoulder syndrome?

Liam Newnan
Charlotte, N.C.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 1 Speen Street, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.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RFID: A Ticket to Ride
Zipcar members use RFID-based "Zipcards" to rent vehicles by the hour or day. The application, which greatly simplifies the customer experience, is among those recognized in the 2006 *Computerworld* Honors Program. **PAGE 21**

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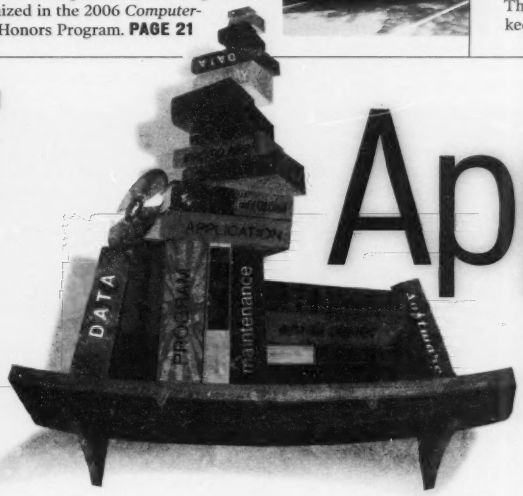
Plugging Holes in Antivirus Shield
Antivirus software is quashing a vulnerability as it should, but Mathias Thurman wonders why this worm keeps wriggling in every day. **PAGE 24**

OPINION
What's Keeping the Tort Lawyers at Bay
Mark Willoughby explains why predictions that security breaches would trigger a flood of liability lawsuits haven't come true. **PAGE 25**



RICHARD BORGE

Application Overload

Eliminating **excess** software can free up **funds** in your IT budget. Here's how to cut out **waste** in your **software** inventory.

By Sue Hildreth

MARK LACK, who's in charge of business and financial reporting at Mueller Inc., a manufacturing firm in Ballinger, Texas, is only half-joking when he says the water cooler is his best source of information on what reporting software his company owns.

Lack oversees Mueller's deployment of Cognos Performance Applications, a suite that's supposed to be the standard for analysis and reporting for the entire company. But sometimes he finds that competing products are being used instead.

"Someone will say, 'Hey, did you know this department just bought that package?' So I go look at it, and it's not got even the same level of capability ours could provide," says Lack, manager of planning and financial analysis at Mueller.

"We recently found out that our manufacturing department had bought a piece of reporting software right under our nose," he says. "They bought what they thought was a great software package without realizing we already had that capability in-house."

Redundant applications, unused functions in ERP and CRM suites, and just plain old shelfware — applications that were purchased and then forgotten — are common and expensive. Costs related to the excess software add up: There are software license fees, maintenance fees and the cost of the IT labor needed to support the applications. On top of that, there's a lack of integration and consistency among systems. Eliminating redundant or excess software can go a long way toward freeing up funds in an IT budget.

Sniffing Out Shelfware

There are several ways shelfware can accumulate, says John Schick, a consultant at Compass America Inc., an IT consulting firm in Naperville, Ill. "One way is mergers and acquisitions," Schick says. "Another is through decentralized purchasing. That's when one department funds a suite of tools, then another department funds a similar project and buys a second suite that does essentially the same thing."

In Mueller's case, lack of interdepartmental communication has been one of the chief causes. Like in many large organizations, departments don't always coordinate their IT projects.

"We work constantly to communicate what this [Cognos software] can do. But there's still a lot of duplication of effort with different departments, with different software systems, all trying to achieve the same thing," says Lack.

Fortunately, there are a number of other ways that IT managers try to keep waste out of their software

budgets. Here are some of their best suggestions:

[1] BEWARE OF SUITE DISCOUNTS. Software suites often wind up as shelfware, or partial shelfware. Jane Disbrow, an analyst at Gartner Inc., says plenty of CIOs complain that they're not fully using large enterprise suites, such as multimodule ERP or CRM packages. She estimates that 25% to 30% of the capabilities within enterprise software suites go unused.

"Vendors really want to sell the complete suite of products, and they do that by offering very aggressive discounts," Disbrow says. While that's not initially a huge problem, given the large savings from discounts that can run as high as 75%, it can become one when the customer realizes that he's paying annual maintenance fees on unused software.

"The vendors don't want to remove those licenses [from the contract] because the revenue stream from maintenance is very, very profitable," she says.

Lack says he, too, has seen managers unwittingly buy more software than they need. "Often, [the vendor] will throw in a sweetener, give them something extra. Maybe they'll take them to lunch. Then [the managers] find themselves buying a new piece of software whether they need it or not," he says. "It happens all the time."

Steffani Lomax, an analyst in the Marlboro, Mass., office of Software Success Partners LLC, a consulting firm specializing in IT asset management, previously worked for an IBM organization devoted to helping customers with shelfware issues.

"Some large enterprise customers were complaining that they'd spent all this money on software but weren't using a half of it," says Lomax. "It wasn't just IBM, but all vendors who sold the large, all-you-can-eat agreements. These agreements usually involve a huge discount, but they can also be three years long. Plans and priorities can change in that time."

[2] INVEST IN SOFTWARE MANAGEMENT TOOLS. Asset management, license auditing and automated mapping tools all can help uncover and/or manage software assets and licenses. In some cases, say CIOs, it would be extremely difficult to learn of the existence of shelfware without the right technology to sniff it out. Here are examples of how different tools can help organizations get a better grip on their shelfware.

■ LICENSE MANAGEMENT. The University of Michigan uses Sassafras Software Inc.'s K2 software license management suite to stay on top of software usage.

"We create mountains of usage data through K2 that shows us in days, weeks, months, years the amount of usage an application has — by user, workstation, unit, department and so forth," says Scott Lemm, IT contract administrator and IT asset management coordinator at the university.

The data helps the university comply with license contracts and renegotiate them when use is lower than expected. "With usage data in hand, we can work with vendors to optimize our license by modifying contracts or by retiring the application," says Lemm, noting that the university once saved $1.2 million through better license negotiations.

■ APPLICATION MAPPING. Boise State University uses Nlayers Inc.'s InSight, an appliance that can map out applications and their dependencies across an organization, says David O'Neill, executive director of the Idaho university's office of IT. O'Neill uses that information both to evaluate the need to upgrade or downgrade licenses and to streamline application management — by consolidating licenses held by different colleges, or increasing or decreasing a site license, for example.

"The appliance goes out and does an inventory of what machines are serving certain applications, who's using them and where. Then you can find out what you are licensed for, what isn't licensed and who's serving it," says O'Neill, noting that the results can sometimes be surprising. "In at least one case, I thought we were the only ones serving a particular application, but then I discovered that another one of the colleges was serving it as well."

■ IT GOVERNANCE APPLICATIONS. These tools can offer a range of functions, including asset management, portfolio management and business process mapping. Warner Bros. Entertainment Inc., for instance, uses Troux Technologies Inc.'s Enterprise Architecture software to keep track of its portfolio and the relationships between the various applications and business processes.

"[Using Troux], I can look for redundancies in my application portfolio . . . and take advantage of opportunities for consolidation and reuse," says Douglas Rousso, vice president of architecture and planning at Warner Bros.

[3] FOLLOW THE MAINTENANCE MONEY. Many CIOs advocate spending time with the accounts payable department. "Accounts payable people are going to have the best information," says Schick. "Look for ongoing software payments and find out what's included in the invoice. Often, it's for a bundled suite of products, and there may be one payment that covers 30 or 50 payments. So ask what's included in it, who needs them, and maybe talk to the vendor about lowering the price or getting rid of some of the products."

Jeff McIntyre, assistant vice president of technology services at BNSF Railway Co. in Fort Worth, Texas, says it also pays to examine your maintenance contracts on a regular basis.

"Every year, I go through and say, 'What is this, where are you using it?' Because purchasing software is a double whammy, since you pay the license plus the annual maintenance fees of around 15%," says McIntyre.

BNSF also tracks in-house application projects using a product from MKS Inc. to ensure that all development projects are fulfilling specific business requirements and aren't duplicating past efforts.

[4] ADVERTISE YOUR ASSETS. Rogue purchases by departments are huge contributors to the shelfware problem. So centralizing purchasing — and making it fairly easy for departments to get what they want — can help reduce maverick buying.

BNSF has a central Web site where users can get every software package the company owns, McIntyre says. "You can log on and see a list of standard products that anybody can download anytime," he says. "If it's not there, there are instructions on how to order it. But it's easier for most people to get it by just downloading it from our site."

It's also a good idea to tell workers what software licenses the company owns, says Lomax. "Employees need to understand what licenses are available to them," she says. "If they don't know, they'll be speaking to vendors themselves and purchasing software that the company already owns." ◗

Hildreth is a freelance writer specializing in enterprise software. She can be reached at Sue.Hildreth@comcast.net.

CUTTING THE WASTE

Better negotiations mean less shelfware

WHEN PURCHASING NEW SOFTWARE, IT managers can easily get sold a lot of features and functions they don't really need, perhaps because it gets them a better discount, or just because the sales rep has made a great pitch. But software contracts can wind up being too much of a good thing.

To get a low-fat deal, here are some tips for negotiating a new software license:

■ Estimate what software components will be used within a year. Gartner analyst Jane Disbrow recommends taking a hard look at any extra options and modules offered to determine whether they'll really be used in the short term. "I tell people to at least call references in their industry to see if they're using the software in the way that you would anticipate doing so," she says. "If not, be tough about saying, 'I don't need this.' "

■ Resist buying just to meet uncertain future needs. The discount or "free" software you get usually doesn't justify the maintenance and support costs incurred by the extra software, Disbrow says. Also, those extra applications won't be freebies when the license is renewed, says Scott Lemm, IT contract administrator at the University of Michigan. "The vendor seeds the module at no visible upfront cost, only to charge for it in later contracts," he says. Once that software becomes entrenched in the company, it's difficult to switch to a different product from another vendor. Instead, Lemm advises negotiating for price protections for products you may want to add in the future.

■ Negotiate the right to remove or swap out modules. Look for "swap-out" agreements where you can replace one module with another at no penalty if your needs change, suggests Steffani Lomax, a consultant at Software Success Partners. Vendors who license based on usage are often more willing to do this than vendors who license based on company revenue or total employee population, Disbrow says.

– SUE HILDRETH

RFID: A Ticket to Ride

This car-sharing company uses wireless technologies to simplify the customer experience. **BY MARY K. PRATT**

COMPUTERWORLD HONORS SHOWCASE

Zipcar Inc.

ORGANIZATION: Cambridge, Mass.-based Zipcar is the largest car-sharing company in North America, offering self-service, on-demand cars by the hour or day.

PROJECT CHAMPIONS: Roy Russell, founding chief technology officer, and Doug Williams, vice president of engineering

IT STAFF: 10 employees

ROI: Company officials estimate that the initial cost of implementing a wireless data network three years ago to communicate data between Zipcar vehicles and office-based servers was less than $1 million. Returns include increased reliability, security and service to members, as well as the ability to efficiently expand the company.

BACK IN 2000, the Zipcar crew set out to establish a new class of transportation: cars that drivers could sign up to share for a fee. It was an ambitious goal, and one it seems to have accomplished.

Today, Zipcar Inc. has more than 70,000 consumer and business members, with nearly 2,000 vehicles in multiple locations across 10 states, Washington and Toronto. Members can reserve cars online or via phone. And unlike a rental company, Zipcar places its cars in neighborhoods throughout the regions it serves, letting members pick up and use the cars for quick errands or longer trips, similar to how they might use a car of their own.

But the unique business model isn't the only achievement getting attention. The technology the company developed to support the business is also attracting praise.

Zipcar started with a single car and the basic systems to support its first 30 or so customers. But Zipcar executives knew from the start that technology would make or break the company, and that philosophy still drives them today.

"We realize we have to create something better than car ownership. And one way we can do that is really optimizing the technology and the experience," says Matthew Malloy, vice president of marketing and sales operations. Adds founding Chief Technology Officer Roy Russell, "This business doesn't exist without the combination of the Internet and the wireless technology to communicate with vehicles."

Zipcar members make reservations online, swipe their RFID-based Zipcards and drive away.

Jeff Woods, an analyst at Gartner Inc., agrees. "What makes Zipcar special is its RFID driver authentication and its wireless vehicle-data monitoring," he says. "What Zipcar put together is unique." *Computerworld* named Zipcar a 2006 Honors award recipient in the transportation category for its use of radio frequency identification and wireless technologies to grow its business.

The Technology

Here's how it works: Zipcar members use "Zipcards" to access vehicles. The cards rely on RFID technology to recognize members and their reservation times. Data is transmitted between the vehicles and back-end systems via a Cingular Wireless network.

For the first few years of operation, however, Zipcar used Cellular Digital Packet Data (CDPD) built on top of an analog system to send data between its cars and reservation systems.

Although Russell says CDPD was the best choice at the time, Zipcar's tech staff knew it wasn't a long-term solution because the technology wasn't secure. In the early days, Russell recalls, members could have used their cards to open any Zipcar, regardless of whether they reserved the vehicle. The technology wasn't scalable or reliable, either.

So three years ago, Zipcar upgraded, choosing Cingular Wireless to transmit data between its vehicles and its reservation system. The implementation took a couple of months. Russell says it cost under $1 million for the entire project but doesn't have exact costs available.

Zipcar still relies on RFID technology, used with a Zipcard and a reader on each vehicle's windshield. Each vehicle now has a small embedded system, developed in-house and mounted in a concealed location. The Zipcard is authorized, and information is communicated on a GSM/GPRS data network that ensures Zipcar can administer everything from its headquarters, says Doug Williams, the company's vice president of engineering.

Zipcar also uses the GPRS network to monitor its cars for security and billing purposes as well as for maintenance checks. Zipcar can remotely monitor miles driven, the time the car was used and engine functionality such as battery voltage and fuel level. The network can even alert headquarters if a member forgot to turn off the headlights, data that in the end reduces maintenance costs and helps guarantee a good experience for customers.

Russell and Williams say they chose Motorola G20 and newer G24 modules for modems in part because the hardware operates in a very low-power mode and therefore doesn't drain the cars' batteries. They chose Cingular Wireless for reliability and scalability.

Williams credits the IT team for tying all the innovations together. "It was really enthusiastic people who are into the mission of the company who accomplished this," he says.

Russell and Williams say the company continues to develop its technology, using it to improve the customer experience. "The business really focuses on the members," Russell says, "and that more than anything drives the IT decisions we make."

Pratt is a Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*

TOOLING AROUND TOWN

NICOLE FRANCIS has been a Zipcar member for the past year. As owner of Hudson Franklin Gallery in New York, she uses cars reserved through the company to ferry art around the city, pick up champagne for art openings and travel during long weekends.

Francis says the Zipcar service is cheaper than owning, and it's easier than using a traditional car rental company. But despite her frequent car reservations, Francis can't talk in any detail about the technology she uses to make the whole process work.

And that, she says, is a wonderful compliment.

"It's just super simple. It takes about a minute to make reservations. When I get the car, I swipe my card in front of it, the car unlocks, we take off. To return it, you make sure you've got everything out, swipe your card in front of the sensor, and you're done," she says.

The most challenging part of the whole process is getting the cars out of the garages where they're parked. "That's because of the humans; it's never the technology," she says.

Such experiences are testaments to Zipcar's IT innovations, says Matthew Malloy, the company's vice president of marketing and sales operations.

"The best technology," he says, "is when people don't know they're using it."

– MARY K. PRATT

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_INFRASTRUCTURE LOG

_DAY 45: These underutilized storage boxes have proliferated exponentially. Their inability to share capacity has doomed us. We're trapped in a maze of our own creation.

_DAY 47: I tried to give Gil a boost over this wall, but he pulled a hammie.

_DAY 48: I've taken back control with IBM System Storage™ SAN Volume Controller. It puts my entire storage universe into a simple, virtualized pool. And, unlike EMC, IBM has fourth-generation virtualization technology and over 2,000 customers. I am seeing results.

_Productivity is up. Utilization is up. I.T. guys lost in mazes of data is down.

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Plugging Holes in Antivirus Shield

Software keeps quashing vulnerability as it should, but how does this worm wriggle in every day? By Mathias Thurman

LAST WEEK, I started getting a daily pop-up message alerting me that our antivirus software had discovered the file winllogo.exe in my default directory. A little research told me why the antivirus software was flagging winllogo.exe: It's the file dropped onto a system infected by the PRSKEY vulnerability. But I still didn't know why this was happening repeatedly.

PRSKEY is a fairly old spyware worm that we had the pleasure of dealing with back in 2005. After this worm infects a system, it sits in the background waiting for the user to enter his username and password in either the somewhat popular video game Priston Tale or a Yahoo Web mail account. Once the user does that, a keystroke logger kicks in and begins capturing user keystrokes, including usernames and passwords.

Supposedly, this worm will eventually send this information to a listening Web site. To avoid that, we have placed filters within our NetCache security devices (formerly made by Network Appliance Inc., which sold the NetCache business to Blue Coat Systems Inc. this year) to prevent our Web traffic from reaching such sites. In August 2005, we had a serious problem with this pest infiltrating our environment, and I had to spend many hours managing the incident response. I wasn't happy to see it rear its ugly head again.

The antivirus software was quashing the spyware when it landed on my machine — that's why I got the daily pop-up telling me about the incident. But why was it recurring? I got my first clue when I attended the daily operational status meeting. This forum, which usually lasts a brisk 30 minutes or so, is actually one of the more useful meetings I attend. Typically, the data center operations manager goes over outages that might have occurred in the 24 hours since the last meeting, and we review pending change tickets and other operational activities that are either planned or being executed. The help desk also provides statistics on how many calls it received in the past 24 hours.

SECURITY MANAGER'S JOURNAL

Last week, the help desk opened several tickets on reports of virus-infected machines. The ticket volume started out fairly low, but as days passed, it rose exponentially. It soon became clear that none of these machines was actually infected by a virus; rather, our antivirus client, Trend Micro Office Scan, had done its job, just as it had done with my PC. Users got pop-up messages about winllogo.exe, and they reported that as an incident. That's just as it should be, and all those reports were helpful, even if they were about machines that weren't actually infected.

Dozens of servers had no antivirus protection.

Something was dropping the virus-infected winllogo.exe file on a lot of workstations. That meant that there had to be a server or an administrator's desktop somewhere that was truly infected with the PRSKEY worm. The way our environment is configured, only a server or administrator's desktop could remotely place infected files on users' desktops.

Armed with this insight, we turned to our Trend Micro management console to generate a report and determine whether any servers were infected. The report revealed several infected desktops, and we were able to determine that the source of the problem was several Windows domain controllers, none of which had antivirus software running.

Now we were on to something: Our antivirus defenses had holes. Both the Unix and Windows teams are supposed to follow strict procedures when adding servers to the network. The standard baseline for Windows servers includes the installation of the Trend Micro antivirus product. This clearly hadn't been followed in every instance, so I had the Windows server team install the antivirus software on the identified domain controllers and inventory all servers to ensure that they had antivirus software as well.

Still Buggy

I was hoping this exercise would rectify our virus problem, but the number of help desk tickets continued to increase, and we weren't really getting anywhere with the Trend Micro reports.

My next approach was to have an engineer write a signature that we could deploy to our intrusion-detection sensors to look for indications of this worm. I also had him start scanning our networks with Nessus, a freely available port scanner. In addition to doing traditional port scanning, Nessus can determine whether a machine has antivirus software installed. The results were alarming. Dozens of servers were installed on our network with no antivirus protection. What's more, many of these systems hadn't been patched in years.

This sort of thing isn't unusual when a company doesn't have a handle on its resources or lacks proper network segmentation. Don't get me wrong — we do a fairly good job at network segmentation. But as a global company, we can't effectively police far-flung users who install their own networking gear and set up rogue networks on the corporate network. At some point, technology such as network admissions control could be deployed to help mitigate this type of activity, but the company hasn't embraced it yet.

I regularly bring this issue to the attention of our network manager and senior management and always get the same response: "There's not enough money and manpower to tackle that issue at the moment."

We put the results of our scans and traffic analysis into an actionable report, and we assigned the various functional departments the task of making sure that antivirus software was installed on every machine in the company.

Almost a week later, I can happily report that there have been no more help desk tickets concerning virus infestations, and I haven't seen a pop-up message from Trend Micro in days. We seem to have rid ourselves of this nuisance, again.

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussions in our security blogs: **computerworld.com/blogs/security**

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**

SECURITY LOG

Security Bookshelf

The Art of Software Security Assessment, by Mark Dowd, John McDonald and Justin Schuh (Addison-Wesley Professional, 2006). At more than 1,100 pages, this is probably the most comprehensive application security book I've seen. The authors cover topics ranging from memory corruption vulnerabilities such as buffer overflows to Unix, TCP/IP, firewalls and virtual private networks. Throughout, there are numerous examples of code, configurations and exploits. This book is a must for anyone interested in diving deep – and I mean real deep – into application security.

– MATHIAS THURMAN

Hacking Learned in Mandated Training

A 16-year-old with an extensive criminal record has added hacking to his misdeeds, thanks to the computer training course police ordered him to take to improve his antisocial behavior. According to New Zealand's *Dominion Post*, the youth stole more than $30,000 (U.S.) by hacking into Internet bank accounts. His previous crimes included kidnapping and aggravated robbery.

Encryption Focus Expected in 2007

The SANS Institute predicts that the leading security trend in 2007 will be laptop encryption at many government agencies. Meanwhile, the state of Colorado has awarded a contract for its statewide encryption project to Foxboro, Mass.-based Utimaco Safeware Inc. and its sales partner, South Seas Corp. in Littleton, Colo.

BRIEFS

HP, Cingular Debut Global Notebook

■ Hewlett-Packard Co. and Cingular Wireless LLC last week announced the HP Compaq nc6400 laptop, which features built-in mobile broadband connectivity over Cingular's UMTS/HSDPA-based third-generation wireless technology. The Universal Mobile Telecommunications System modem supports data rates of up to 3.6Mbit/sec. in 145 major cities in the U.S. and in many countries. The laptop will be available late this month starting at $1,599 with integrated Cingular Wireless Broadband Connect capability. Unlimited monthly wireless service is $59.99 per month.

Netreo Updates OmniCenter Views

■ Netreo Inc. has announced the latest version of its network management software. OmniCenter 6.0 includes faster graph generation, improved autodiscovery of network devices, user-customizable views and RSS 2.0 support for viewing network status on mobile devices, the vendor said. It also offers new wizards that automate the process of creating reports on compliance with service-level agreements; the reports can be distributed automatically via e-mail. Pricing for the software, which is also available through a software-as-a-service model, begins at $25 per month per device.

Xythos Adds Online Document Service

■ Xythos Software Inc. this month unveiled a hosted document and file management service aimed at small and midsize businesses that can't afford their own stand-alone systems. Xythos on Demand provides secure file storage and online collaboration using the same software that many Fortune 500 companies and federal agencies use, the vendor said. The price of the online service, which is available now, starts at $4.95 per month for a single-user account or $39.95 per month for a 10-user account.

MARK WILLOUGHBY

What's Keeping the Tort Lawyers at Bay

EVER SINCE security breaches became a regular happening, pundits have been saying liability lawsuits are sure to follow. Information security breaches have been dubbed "the next asbestos" because of the potential for courts to force companies to pay billions of dollars in damages to thousands of victims.

But it probably will be many years before large numbers of victims of information leaks collect a dime. There are a couple of reasons why the deluge of security lawsuits hasn't materialized, according to John Soma, a professor at the University of Denver College of Law and the executive director of its Privacy Foundation.

MARK WILLOUGHBY, CISSP, is a 20-year IT industry veteran and journalist. Contact him at **milloughby@earthlink.net.**

For starters, there isn't a legally recognized foundation for launching lawsuits over data breaches. The mere occurrence of a security breach is insufficient justification for filing a lawsuit, Soma says. Lawsuits charging negligence must show that accepted standards of performance weren't met. But today's standards of security performance are either immature or untested in court.

Actual damages are the second criteria for a lawsuit. Asbestos victims were exposed to a hazardous substance and exhibit symptoms of deadly diseases directly linked to that exposure. So far, there haven't been thousands of security breach victims who can demonstrate that they have actually suffered significant damages, although the potential for that to happen certainly exists.

It isn't even easy to file a lawsuit saying regulations were violated, because today's security regulations are purposely nebulous. The lack of concrete details in federal security regulations, such as the rules under the Sarbanes-Oxley Act, the Health Insurance Portability and Accountability Act (HIPAA) and the Gramm-Leach-Bliley Act, make a poor target for the tort bar.

Dan Langin, an information security lawyer in Overland Park, Kan., says the legal system is "at the stage where the compliance picture is being sorted out." For example, the Securities and Exchange Commission's guidance on internal controls required by Sarbanes-Oxley is nowhere near as specific as the Environmental Protection Agency's regulations on asbestos exposure.

HIPAA and Gramm-Leach-Bliley have vague security guidelines, too. And the security frameworks often used to comply with federal guidelines, ISO 17799 and the Control Objectives for IT and Related Technology (Cobit) from the IT Governance Institute haven't been sanctioned by court decisions. Any lawsuits seeking to establish a precedent that makes these security frameworks a standard have probably been settled out of court to preempt that from happening.

There have been some significant, well-publicized regulatory actions taken against companies that exposed confidential information. Last year, the Federal Trade Commission charged that lax security at BJ's Wholesale Club led to the fraudulent use of credit card information. A settlement requires BJ's to implement an IT security program that will be audited over the next 20 years. Plus, the company is embroiled in lawsuits seeking damages totaling millions of dollars.

In January, the FTC fined ChoicePoint $10 million in civil penalties and $5 million to cover the damages to individuals arising from ChoicePoint selling sensitive consumer information to criminals. ChoicePoint, too, was hit by lawsuits.

But those cases are exceptions. One challenge for the tort bar is that the actual damages for victims of security breaches are varied. To join a class-action suit, everyone must suffer similarly. So unless identity thieves replicate scams resulting in damages of approximately similar amounts, it isn't clear how security breaches can become class-action suits like the big-ticket shareholder lawsuits alleging securities fraud.

The wild card for information security lawsuits is the possibility that criminals are sitting on thousands of stolen identities, waiting for credit-monitoring defenses to lapse so they can pounce and maximize the potential gain from their scams. This scenario could lead to class-action suits if the damages suffered can be shown to be similar.

There's another way that data leaks could turn into class-action lawsuits: if we recognize the economic value of privacy and the costs of losing that privacy. Risk management techniques can easily be used to calculate the cost that victims incur to repair privacy breaches, such as the costs of monitoring credit, closing accounts and opening new ones. With those metrics, class-action lawyers could fulfill the requirement to show similar damages on a large scale.

Perhaps the biggest reason we haven't seen a flood of lawsuits is that organizations are raising the bar by implementing stronger security that a jury would find adequate. "Most companies have commercially reasonable security in place. They've effectively inoculated themselves from liability lawsuits," says technology lawyer Mark Grossman.

If misfortune does strike, and you discover a breach despite your best efforts to keep systems secure, Congress is considering preemptive actions to stymie the tort bar. Legislators have introduced bills that would, if passed, give a federal exemption from liability lawsuits to companies that voluntarily disclose the security breach and cooperate with investigators.

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Break This Rule
Sometimes, ignoring conventional wisdom is the strategicaliy sound way to go, say IT managers like Yuri Aguiar of Ogilvy & Mather. **PAGE 29**

Career Watch
Employers' picks for the best ways to advance your career; certs that don't pay like they used to; H-1B visas with an Australian accent; and career advice from an IT leader. **PAGE 30**

OPINION
Assessments Are Opportunities
Baseline reviews, audits and other assessments give you a chance to re-evaluate direction, change strategy and enter new markets, says Bart Perkins. **PAGE 32**

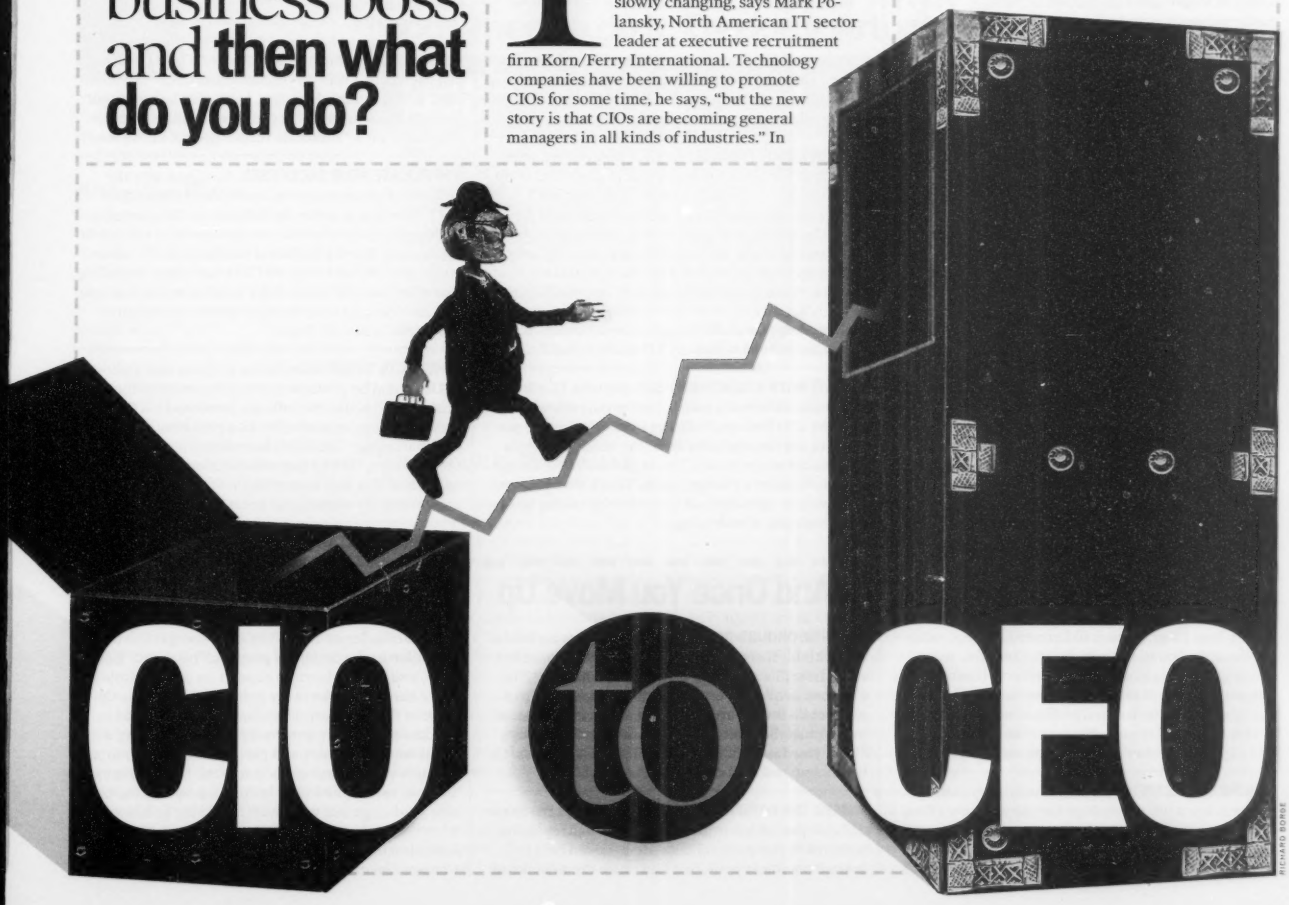
How do you become the business boss, and then what do you do?

By David Raths

IT'S STILL a "Man Bites Dog" story when a CIO is promoted to CEO, but more CIOs, especially in financial services, are making the leap.

That's because the perception of IT executives as geeks is slowly changing, says Mark Polansky, North American IT sector leader at executive recruitment firm Korn/Ferry International. Technology companies have been willing to promote CIOs for some time, he says, "but the new story is that CIOs are becoming general managers in all kinds of industries." In some organizations, the idea of having a tech person in the lead is still anathema, he says, but in others, there is increasing recognition that good leadership can come from any field and is to be nurtured wherever it's found.

We asked four former CIOs to reflect on their ascension to CEO. Here's what they told us.



RICHARD BORGE

If You Want to Move Up . . .

■ **LOSE YOUR INNER GEEK.** Andrew Studdert, CEO of NES Rental Holdings Inc., believes one key to his success is seeing himself as a generalist, not solely an IT person. "There's a dated impression of the CIO as a guy who grew up coding," he says. "I never wrote a line of code in my life. CIOs have to be successful businesspeople first. If they're not, they're not going to last, and they're not going to move up."

■ **KNOW WHAT'S KEEPING YOU BACK.** Three things hinder CIOs' career paths, says Acuity CEO Benjamin Salzmann. First is reporting to the chief financial officer. "This is the worst disease," he says. "Why have IT report to accounting? You show me a company where the CIO reports to the CFO, and I'll show you a company lagging in its industry in the use of technology." Second, when they do get to speak to the board of directors, "some CIOs don't use a human voice," he says. "They start speaking in alphabet soup, or about Java. It's a big mistake." Finally, CIOs often have difficult relationships with other executives because, under the pressure of budgets and deadlines, they get in the habit of saying no, which doesn't make them particularly popular, he says.

■ **COMMIT.** One of the problems with tech people is that there's so much demand, they can always move to some other industry, Salzmann says. Instead, he suggests that you make a commitment to a specific industry. "If you learn everything you can about your industry and bring broader suggestions for change to your company, you'll skyrocket," he says.

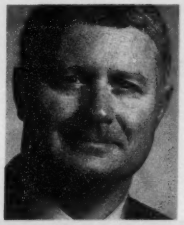
■ **USE YOUR LINE OF VISION.** Salzmann believes that more CIOs should move up, because they work with all departments and see every aspect of the corporation. "It's an incredible advantage," he says. But in his own case, Salzmann supplemented that view with business smarts; in fact, the business savvy came first. After getting an MBA and working in marketing for the first five years of his career, he went to night school to study computers. "Many projects that I was pushing for weren't getting approved because of IT resource issues, so I thought that if I went into IT, I could really make a difference in the company," Salzmann says. When he switched to IT, he became a liaison with the business areas "because I better understood where the business people were coming from," he says.

■ **GET THEIR ATTENTION.** Chris Lofgren, CEO of Schneider National Inc., says his ability to explain clearly how IT projects could create business value got the attention of the company's executive team, which gave him an opportunity to run a business unit. Lofgren was put in charge of Schneider's logistics business, which he led to significant new growth. "And it proved very valuable for me as CEO to have had experience running a business unit," he says.

■ **SHOW YOUR EXPERTISE.** In financial services, understanding what technology can do and how IT assets are best used is a critical competency, not just for a CIO, but for a CEO as well, says Donald Donahue, CEO of The Depository Trust & Clearing Corp. "It's where your biggest expenses are, and it's where your biggest value-add is coming from — your competitive differential — so the roles of CIO, COO and CEO are closely aligned in our organization."

Benjamin Salzmann
President and CEO
Acuity
Sheboygan, Wis.

>>> Salzmann joined the insurance company as CIO in 1990, and he was named president and CEO in 1997. He is credited with moving the company in a "paperless" direction with an automation program that has redefined the way Acuity processes policies and delivers services to agents and customers.



Chris Lofgren
CEO
Schneider National Inc.
Green Bay, Wis.

>>> From 1996 to 2000, Lofgren served as CIO of the company, which bills itself as North America's largest private truckload carrier. He became chief operating officer in 2000 and moved up to CEO in 2002.

Donald Donahue
CEO, The Depository Trust & Clearing Corp.
New York

>>> Donahue was named president and CEO in June 2006, after four years as CIO and three as COO at DTCC, whose subsidiaries provide infrastructure for clearing, settlement and custody of U.S. securities transactions. He is credited as the architect of the firm's post-9/11 business continuity plan.

Andrew Studdert
Chairman and CEO
NES Rentals Holdings Inc.
Chicago

>>> Studdert joined the heavy equipment rental company in 2004 after serving as CIO and COO of United Air Lines Inc. Earlier in his career, he ran an IT consultancy and served as executive vice president at First Interstate Bancorp.

■ **LEARN ABOUT FINANCE.** As CIO, Lofgren reported directly to the CEO and had a seat in executive team meetings. That gave him a broad view into both operations and governance, a key requirement for a CIO to be able to move up, he says. Although Lofgren didn't report to the CFO, he turned to him for help. "It became clear to me that a strong understanding of corporate finance would be useful," he says. "I was lucky to have a CFO who was willing to educate me. With his help, I was able to get an accelerated view of corporate finance, which a CEO really needs."

■ **RUN IT WITH A CEO'S MIND-SET.** Run the IT division as a business, not as a technology group; otherwise you'll be CIO forever, Studdert says. "You're in a position to see the company from the inside out, from the hub out to the spokes," he explains. "It's a unique place to become a change agent. That's how I moved from tech to operations at United — by taking an operational view of technology."

... And Once You Move Up

■ **HIT THE GROUND RUNNING.** When he first arrived at NES, Studdert set out to map its processes to understand how IT could help through automation. "The CEO has to have an understanding of what technology can do for the company and use that understanding to push the limits on the business side," he says. "But if you don't understand the business process, the technology will fail or be underutilized."

■ **MAKE THE HARD CHOICES.** Salzmann says the most difficult part of his transition to CEO was replacing seven of 10 company officers. He believed he'd inherited an officer team that had made the mistake of no longer doing any hands-on work. "They'd become just overseers. I was very hands-on as CIO," Salzmann says. It was a painful process, but he felt he had to put his own team in place. "A company needs a leader," Salzmann says. "Either do that or get out of the way."

■ **REPLICATE YOUR SUCCESSES.** Donahue says the concept of process management is more advanced in IT than it is in other disciplines. As CIO, he led a highly successful process realignment that started in application development and reached into IT infrastructure. "When I became CEO, we began extending that effort outside technology to other areas," he says. "We are reusing those detailed metrics to measure processes in non-IT fields."

■ **PROMOTE OTHER CIOs.** When Lofgren says that CIOs should be promoted into other areas of the business, he walks the talk. He promoted his CIO, Steve Matheys, to executive vice president of sales and marketing. "He didn't have any sales experience," Lofgren says, "but he is good at leadership and processes, and that was something we needed inside our sales force. It's worked out great."

■ **THINK AND ACT THE PART.** CIOs view strategy with a tech-focused lens, Donahue says. "As you move up to CEO, you have to take that lens back and think about strategy from a much broader perspective and not always have an IT bent," he says. Another challenge is to delegate more. "As CIO, you have to do a deep dive in the details of projects," he notes. "But as CEO, you have to learn to depend on other people to make sure the projects are going well." Also, as the voice of the company, Donahue says, he has had to become much more externally focused, dealing with regulators, customers and partners. "You have to stay in touch with constituents inside the firm," he says, "but you spend more time keeping an eye on the outside landscape [for whatever] is coming to bite you." ▸

Raths is a freelance business writer in Narberth, Pa. Contact him at draths@mac.com.

Break This Rule

Some IT management 'rules' are made to be broken. Here's why – and when to do it. By Judy Artunian

OGILVY & MATHER Worldwide has a tradition of jumping on technologies early. The New York-based advertising agency was in the vanguard of virtual private network use, and by 2003, Web services were active on the company's network. Some might say that Ogilvy's IT group violates an unwritten IT management rule that cautions against investing in nascent technologies too soon.

But to Yuri Aguiar, a senior partner and chief technology officer, breaking these rules was strategically sound. "We knew we'd be able to achieve much better application integration by adopting Web services, so the reward was greater than the risk," he says.

Yuri Aguiar

Like any field, IT management has its unwritten rules and conventional wisdom that managers ignore at their peril. But most IT managers occasionally break or bend a rule, so we talked with some of them about when and why you should consider doing so.

Know the Rules

Before you can break the rules, you have to know what they are. Other than the rules prohibiting unethical and illegal acts, there are few universal IT management edicts. What is prized in one corporate culture may seem foolish in another.

For example, Rich Hoffman recalls that project planning was discouraged at an entertainment company where he once worked. "They prided themselves on not planning. IT was fast and loose," he says.

That was a rule made to be broken, but Hoffman, who is now president and CEO of Hyundai Information Service North America LLC in Irvine, Calif., still had to beware of the culture police. "You had to be a closet planner, because if you openly admitted that you were a planner, they insisted that in their culture, it couldn't be done," he says.

Rich Hoffman

Once you know the rules, ask yourself if you have a good reason for wanting to break one. Rule-breakers are rarely rebels without a cause, says Mark Lutchen, a partner at New York-based PricewaterhouseCoopers who formerly served as the global CIO for Price Waterhouse. "Often, people break rules not because they want to be renegades but for purposes of expediency," he explains.

Here's How

If you're going to break an IT management rule, do it the right way. Jeffrey Kaplan, a director in the Washington office of consulting firm PTRM Inc., offers these guidelines:

DO determine if it's worth the risk. Understand what makes the situation unique, what the new process or procedure will be and why it will be an improvement over the traditional approach.

DON'T break a rule based on a hunch or knee-jerk reaction to something you hear.

DO share the risk with people in your organization who have a vested interest in what you're trying to accomplish. Get the support of business unit executives or other colleagues so that you're jointly accepting the risk.

DON'T unwittingly send the message that you encourage rule-breaking. To avoid setting a bad example, explain to your team your rationale for breaking a particular rule.

Particularly in IT, he says, rules can become outdated quickly. "A rule has to be constantly re-evaluated, because IT is constantly changing," Lutchen says. "You may have a set of rules that were for a different era or infrastructure."

You Break It, You Own It

Before you break a rule, consider the consequences. "Assess the risk component and whether you're willing to accept it," says Lutchen. For example, he says, if a company were facing bankruptcy and its software engineers were leaving for more secure jobs, the only way to keep IT functioning might be to outsource all or most of IT. In that case, a CIO might accept the risks associated with outsourcing core competencies, even though that's breaking a major rule. But outsourcing the actual management of IT would probably be judged an unacceptable risk because the CIO is ultimately accountable for management decisions.

Here are some axioms that were perceived as rules by the IT managers who broke them, along with their advice on when it makes sense to do so.

■ **RULE: Launching a project requires a business case with a clear return on investment.**
■ **WHEN YOU CAN BREAK IT: When the project will deliver intuitive benefits.** During the Price Waterhouse merger with Coopers & Lybrand in the late '90s, Lutchen made standardization a priority so that the newly merged firms' 150,000 employees in 150 countries could work together more seamlessly. He recalls that developing a complete business case for standardization was impossible because future benefits couldn't be defined. "There were things we couldn't see at the time," he says.

But he knew that standardization would pay off, and time proved him right. "The minute computer viruses came out, all we had to do was make one change on a server and push that change out to everybody. We didn't have to touch every PC," says Lutchen. He had understood intuitively that one problem, like a computer virus, can create 150,000 problems, but standardization can shrink that back down to one. "But you aren't going to get into detailed [ROI] calculations around that," he says.

■ **RULE: Don't offer bonuses to your project team if your company's human resources policy prohibits it.**
■ **WHEN YOU CAN BREAK IT: When it's a seller's market for IT skills and retaining the best people is particularly tough.** A well-deserved bonus can keep skilled team members from walking out the door. "Rules like that can be carried to an extreme because you don't want [IT] to be different from the rest of the organization," says Lutchen. "But IT *is* different. HR people don't always understand the makeup of the IT marketplace."

■ **RULE: When you have to trim the IT budget, cut back on IT training.**
■ **WHEN YOU CAN BREAK IT: When you need to hold on to key members of your team, which is virtually always the case.** This is a rule that smart CIOs break regularly. "When you've got tight budgets and you're trying to cut, professional development tends to be one of the first things to go," says Brian Young, vice president of IT at Creighton University in Omaha. He prefers to find other ways to trim. For example, he says, "we have a refresh for servers every three years, [but] we've had one extend out four or five years so the resources would be there to invest in training."

■ **RULE: Don't invest in new technology until the early wrinkles have been ironed out.**
■ **WHEN YOU CAN BREAK IT: When you need cutting-edge technologies to compete in your industry and the harm of not investing outweighs the risks of investing.** Ogilvy's VPN gave the firm an edge in a competitive market by significantly reducing the time it took to distribute advertising material to the firm's offices around the world, Aguiar says.

■ **RULE: Sign only short-term IT contracts because the fate of technologies and vendors can change quickly.**
■ **WHEN YOU CAN BREAK IT: When you have a reliable partner that provides core services and its contract includes price reductions and other adjustments over time.** If you've found a good service provider, you don't need the headache of renegotiating every year, as long as you write the contracts to be flexible, says Young. "For example," he says, "the language in a multiyear contract for bandwidth should say that every six months you can review it to see if you can get more bandwidth for the same price or the same bandwidth for a cheaper price."

Artunian is a freelance writer in Newport Beach, Calif. Contact her at jartunian@sbcglobal.net.

Career Watch

$56.69

Hourly pay for Java developers in the third quarter, according to Yoh Services LLC's Index of Technology Wages, based on wages of approximately 5,000 temporary technology professionals hired by more than 1,000 businesses in the aviation, engineering, IT, manufacturing, scientific, telecommunications and utility industries.

Other hourly rates in the index:

Technical ERP consultant	$83.36
Oracle database administrator	$58.55
Project manager	$54.41
Data manager	$46.80
Network administrator	$38.71

GETTING AHEAD

The best ways for employees to advance in their careers:

Acquire or update skills, abilities and knowledge	67%
Build and keep in touch with a career network	64%
Volunteer for challenging and visible opportunities	41%
Identify and communicate career goals	34%
Identify and learn from mentors and role models	32%
Perform their jobs in an exemplary manner	29%
Project a positive professional image	27%
Learn how to learn from experience	21%

Note: Multiple responses allowed.

SOURCE: SURVEY OF 348 COMPANIES, RELEASED BY OUTPLACEMENT FIRM RIGHT MANAGEMENT IN OCTOBER 2006

Reaching Out From Down Under

The concurrence of several systems modernization and integration projects at Australian government agencies has led the country's visa bureau to launch an international recruitment drive for Java, C++ and other types of IT professionals.

The government hasn't released estimates of the number of technicians with Siebel, SAP, security and other types of expertise needed to work on IT projects in the public sector. But "acute" demand has led the Australian Visa Bureau to add these and other skills to its Migration Occupations in Demand List, says Oonagh Baerveldt, a communications manager for the bureau in London.

Applicants for immigration with these qualifications are given "bonus points" and can have their visas fast-tracked, but the overall process typically takes about a year, says Baerveldt. The fastest approach would be to obtain a work-sponsored visa, known in Australia as the 457 Standard Business Sponsorship Visa, which is akin to an H-1B visa in the U.S., he says.

The first part of the application process is a skills assessment, in which applicants detail their educational and professional backgrounds, including expertise they've developed in a sought-after skill. "Technically, you don't have to work in the field that you apply for," says Baerveldt. "You could apply to be a J2EE programmer and become a lifeguard on the beach."

45 Maximum age for Australian immigration.

For more information about the Australian visa program and current vacancies, go to *www.visabureau.com*.

– THOMAS HOFFMAN

ASK A PREMIER 100 IT LEADER

TITLE: Senior vice president for planning and CIO

ORGANIZATION: Rockford Health System, Rockford, Ill.

L'Heureux is this month's guest Premier 100 IT Leader, answering readers' questions about insulating your career from the threat of offshoring and finding an entry-level job. If you have a question you'd like to pose to one of our IT leaders, send it to askaleader@computerworld.com and watch for this column each month.

I would like to return to school to study computer science. What areas should I concentrate on that would not be likely candidates for outsourcing? Outsourcing of good-paying technical jobs is definitely an issue. I believe one way to insulate oneself from the possibility of outsourcing is to focus on processes. IT does not provide a return on investment unless it uses its power to change processes to make an organization more efficient. By concentrating on methods, process definition and analysis, you will bring to the table not only the ability to structure automation, but also the ability to identify what to automate. And it's much harder to offshore process and systems analysis than programming and hardware design. Although it's difficult to focus on a particular industry while in an academic setting, specializing in an industry such as health care, banking or manufacturing does strengthen your hand. I would look at industrial or management engineering programs with a concentration in information systems.

I have been in technology for 30 years and made a good living until outsourcing took my job. I know that if I move to a bigger city, my job prospects would improve, but I really do not want to do that. Any suggestion on how I can get back into the IT market in a semirural area? Have you tried remote consulting? Depending on your exact skill set, you might be able to bid on and win contracts that would allow you to work at home. Prepare to market yourself beyond the typical résumé. Use the Internet to find out what types of positions companies are recruiting for, and send them proposals outlining how you could fill their needs as a contractor, not an employee. In other words, have them outsource to you!

I just graduated with a bachelor's degree in computer engineering. What is my best hope of an entry-level IT job? When I have the luxury of filling a vacant technical job, I often seek some very specialized concentration that requires some experience. So it can be difficult for those just entering the workforce to land a job. My recommendation is to seek out opportunities at a large technology vendor such as Intel, Amdahl, Motorola or Cisco. These companies are more likely to give new engineers a chance.

TROUBLED CERTS

Pay for some certifications plummeted in the six months from April 1 to Oct. 1, according to a wide-ranging Foote Partners LLC survey covering 129 certification categories and 124 noncertified skills. The following are some particularly hard-hit certs:

CompTIA Linux	-43%	Citrix Certified Enterprise Administrator	-20%
CompTIA Network Technician	-36%	Microsoft Certified Trainer	-20%
CompTIA Security+	-33%	Microsoft Certified Database Administrator	-20%
Cisco Certified Design Associate	-22%	Cisco Certified Design Professional	-18%
Cisco Certified Network Professional	-22%	Microsoft Certified Systems Admin: Security	-13%
CompTIA Certified Technical Trainer	-22%	Linux Professional Institute certification	-13%
Certified MySQL 4.0 Professional	-22%	Cisco Certified Network Associate	-12%

Source: October 2006 survey of 55,000 IT workers in North America and Europe

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BART PERKINS

Assessments Are Opportunities

MANY corporations periodically commission external assessments of their IT organizations. IT staffers usually look forward to these assessments (also known as baselines, reviews and the dreaded "audit") with the same enthusiasm they exhibit for root canals. Assessments are often perceived as witch hunts with hidden agendas whose primary purpose is finding fault and punishing (or firing) the guilty.

In reality, assessments offer valuable benefits. They provide IT staffs and senior managers with a rare opportunity to step back from day-to-day concerns and re-evaluate direction, change strategy and enter new markets. In addition, assessments often help to improve other departments' perceptions of the IT organization. Assessments are frequently commissioned by new CIOs as an unbiased way to quickly familiarize themselves with their new organizations.

BART PERKINS is managing partner at Louisville, Ky.-based Leverage Partners Inc., which helps organizations invest well in IT. Contact him at **BartPerkins@LeveragePartners.com**.

Good assessments offer an impartial and comprehensive picture of IT concerns across the enterprise. They must clearly describe the business demand for IT services and the cost of those services, and they must provide an analysis of IT's capability to deliver. These components together should provide a thorough summary of IT's strengths and weaknesses. In addition, assessments normally include recommendations for strategic changes and clear definitions of the projected benefits to be derived from the recommended changes.

Here are some additional things assessments can help you accomplish:

Develop a common language. Different people use different terms in different departments. Having a set of common terms and definitions eliminates many misunderstandings and can help the organization separate symptoms from root problems. For example, common definitions help distinguish discretionary and nondiscretionary IT expenses and tangible and intangible benefits. Definitions also facilitate the process of weighing options and developing solutions.

Develop a common understanding. A group of executives discussing an IT problem can resemble the proverbial group of blind men describing an elephant, where each perceives the animal differently depending on which part of its body he's touching. While each viewpoint is valid, none is able to accurately describe the entire elephant. An assessment provides an overall understanding of IT that combines multiple perspectives and provides a common framework from which to analyze IT issues and concerns.

Listen across the company. It's easy for senior management to become isolated from the people and problems they manage. Middle managers and knowledge workers usually have a good understanding of existing problems and potential solutions. However, they frequently have no mechanism to communicate these ideas to the executive team. An assessment provides an opportunity for senior management to listen to (and learn from) all levels of the organization. Don't overlook the many good ideas floating around your company.

Gather competitive information. Understanding where your business programs lead or lag your competition's is critical. Use an assessment to gain industrywide perspective. Compare your IT services, unit costs, service levels, etc. with those of other companies. Consultants and research firms can provide competitive data. In addition, other companies in your industry may share their data privately.

Establish a discussion forum for IT issues. Virtually every IT organization has a large backlog and vocal critics. Well-run IT groups have entities that establish IT priorities and debate contentious issues. These may take the form of steering committees, IT executive committees or, ideally, agenda items at executive management committees. If an effective forum doesn't exist in your company, the assessment can be used to establish this important function. And remember, this group should also be made aware of (and celebrate) all successful IT efforts.

Provide air cover. Investing in an assessment demonstrates the company's desire to improve the way IT supports the business. Inevitably, the desired improvements will require additional staffing, funding or political capital. The assessment helps provide justification for these needed resources. As a side benefit, it also helps mute the critics until the results of the improvements are realized.

Function as catalysts for change. Even when improvements are desired, people usually resist change. Assessments can provide the necessary inspiration, energy and momentum for change to occur.

An assessment is only the first step. Budgetary or other constraints may require you to pick and choose from among the assessment's recommendations. But you won't reap any benefits from an assessment if you don't take any action. Use the assessment to bring about changes that will improve your organization and enhance IT's ability to support the business.

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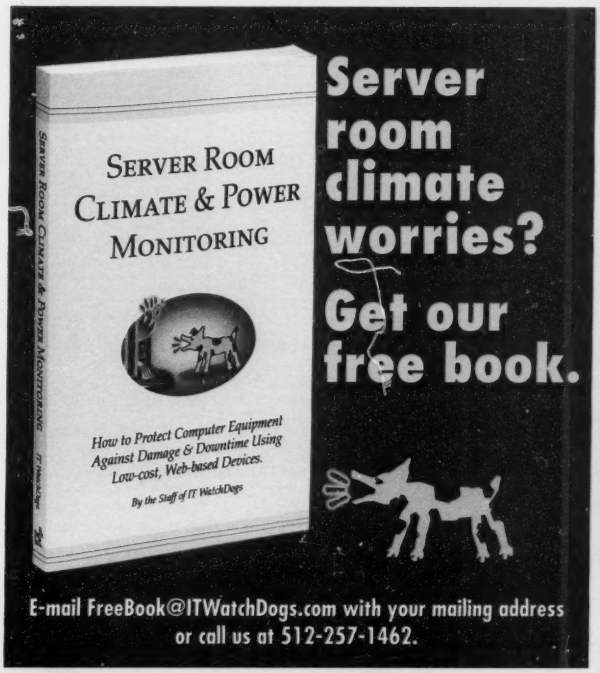
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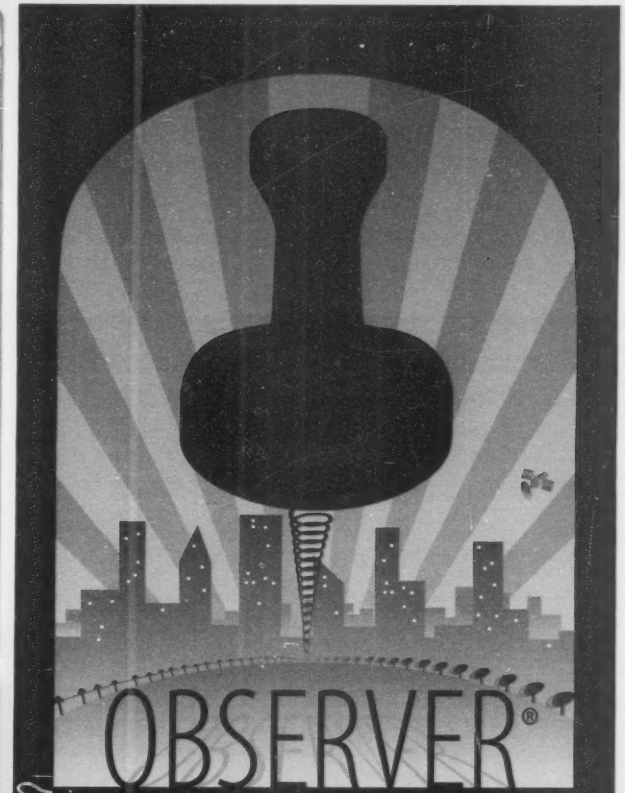

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REQUEST FOR PROPOSALS (RFP) FOR THE NETWORK COMPUTING RESOURCE MANAGEMENT SERVICES COLLECTIVE # 11785

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The Port Authority of New York and New Jersey is currently seeking proposals from qualified companies to provide system administration services for local area networks, database and application servers, desktops and laptops; to furnish and install computer hardware to the Authority; to provide break/fix support for the Authority's computer hardware; and to provide asset management services for the Authority's computer equipment.

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Interested proposers may request a copy of the request for proposal via email at askforbids@panynj.gov or fax 212-435-3959. Reference RFP # 11785 on all requests.

The complete document can also be obtained online through this ad on www.panynj.gov.

Proposals are due by 2:00 PM on 1/08/2007. Send proposal(s) to: The Port Authority of NY & NJ, Attn: Bid/RFP Custodian, Procurement Department, One Madison Avenue, 7th Floor, New York, NY 10010.

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Programmer Analyst needed in NJ & other client sites to analyze & dvlp prgms. Must have exp using Winrunner & Loadrunner. Mail resume to: Global Consultants, Attn: Hireme, 25 Airport Rd, Morristown, NJ 07960

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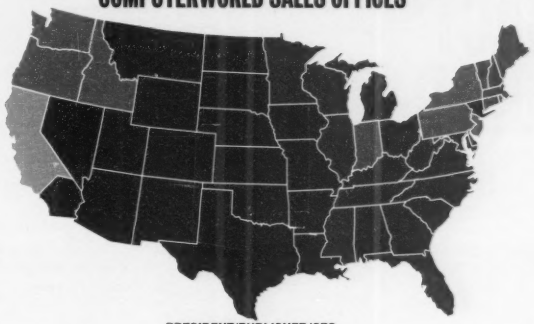

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County Data

images often contain personal identifiers and usually are accessible to anyone with Internet access. That has made county Web sites a veritable treasure-trove of information for identity thieves, according to privacy advocates.

Many county governments still haven't begun to address the prevalence of personal data, despite heightened public concerns about identity theft, said B.J. Ostergren, a privacy advocate in Richmond, Va. But a growing number appear to be attempting to fix the problem, she added. "I think a lot of people are beginning to put the skids on this sort of stuff," Ostergren said.

In October, for example, the council that oversees Washington's King County, which includes Seattle, passed an ordinance requiring that the county recorder's office remove online access to all title deed documents. The vote followed a council member's discovery of more than 200 Social Security numbers, including those of several public officials and professional athletes, in title deeds on the county's Web site.

Fears that the ordinance would hurt the county's business interactions with mortgage companies and others prompted some initial resistance from the recorder's office, said a spokesman for Reagan Dunn, the council member who sponsored the bill. But the title deeds have been pulled from the site and won't be restored until the Social Security numbers are somehow blocked from public view, the spokesman said.

In another example, the recorder's office in Grant County, Ind., pulled all of its document images from the Internet in July after a lawsuit related to identity theft was filed against the county. "There are no definite plans to put them back up on the Internet, although Social Security numbers will be redacted starting next year," said county recorder Dixi Fischer Conner.

Laws in several states, including Florida, New York and Washington, require recorders to redact personal data from online records. But removing such information can be a huge challenge because of the sheer number of documents that need to be examined.

Dual Approach

Foglesong said that in Orange County, each image was reviewed by redaction software from Mentis Technology LLC and then manually checked by workers. "We learned that software combined with a human review is much more dependable than human eyes searching page after page," she said.

Software-only approaches are also unreliable, said Dana DeBeauvoir, clerk of Travis County in Texas. "It's definitely not the automated process that software vendors will have you believe," she said, adding that workers have to double-check documents to verify that proper redactions have taken place. The wide range of document formats and the fact that some documents are handwritten can pose problems for redaction software, DeBeauvoir said.

Travis County removed all document images from its Web site in June because of identity theft concerns and just started putting them back online last week after redacting sensitive information.

DeBeauvoir said that about 11 million documents had been redacted and restored and that another 5 million newer records should go back online soon. "I would give the quality of the work an A+," she said.

But the success of redaction efforts remains in question, said David Bloys, a retired private investigator who publishes a newsletter called "News for Public Officials" in Shallowater, Texas.

Bloys said he checked Travis County's Web site last week, "and the very first document I found contained Social Security numbers, driver's license information and a home address on the first page." Subsequent pages provided financial, family and medical information, he added. What's worse is that the Web site had numerous pages like that, Bloys claimed.

"Redaction just doesn't work," he said. "I think the only way to really protect these documents is to make sure they stay within the four walls of the courthouse." ▸

Lessons Learned

Statistics from the document redaction project in Orange County, Fla.:

- **Land-ownership documents** accounted for 39% of the pages that required redaction – the largest percentage by type of document.
- **Court papers, judgments and orders** were second on the list, accounting for 25% of the pages that had to be redacted.
- Of 60,359 **death certificates** on the county's Web site, 55,313, or 92%, had to have data blacked out.

SOURCE: CAROL FOGLESONG, ASSISTANT COMPTROLLER, ORANGE COUNTY

Users Unhappy With Massive Navy Intranet, GAO Says

BY LINDA ROSENCRANCE

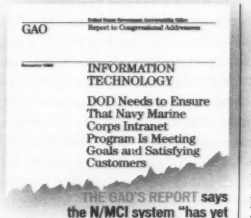
The Navy/Marine Corps Intranet program has yet to meet user expectations even though $3.7 billion has been spent on the effort over six years, according to a report released earlier this month by the U.S. Government Accountability Office.

The Navy's effort to create a single intranet system for the two branches of the military is expected to be completed in about four years at an overall cost of $9.3 billion.

The report states that the N/MCI program has failed to meet the two strategic goals the Navy set for the project at its 2000 launch: to foster innovation via interoperability and shared services and to provide information superiority — which the military defines as the capability to collect, process and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same.

The Navy has also failed to implement a performance plan it created in 2000 to measure and report on the project's progress, the GAO said. "By not implementing its performance plan, the Navy has invested, and risks continuing to invest heavily, in a program that is not subject to effective performance management and has yet to produce expected results," the report said.

Electronic Data Systems Corp. is building the intranet under a contract signed with the Navy in October 2000 to create a single system for the Navy and Marine Corps. EDS said that more than 500,000 active Navy and Marine personnel are using the system.


GAO
Report to Congressional Addressees
INFORMATION TECHNOLOGY
DOD Needs to Ensure That Navy Marine Corps Intranet Program Is Meeting Goals and Satisfying Customers

THE GAO'S REPORT says the N/MCI system "has yet to produce expected results."

During the next four years, EDS will continue to install desktop, server and infrastructure assets to replace the thousands of independent networks, applications and other hardware and software that ran the previous Navy and Marine intranet systems.

The GAO found that the Navy's own surveys of the three main intranet customer groups — end users, commanders and network operators — revealed varying levels of satisfaction with the program, mostly lower than the Navy's own threshold for a satisfied user. "Without satisfied customers, the Navy will be challenged in meeting program goals," the report said.

Changes to Come

The GAO submitted recommendations to the U.S. Department of Defense, which oversees the Navy. Among them were that the Navy should be required to implement a more effective performance management program, better measure service-level agreement performance and better manage customer satisfaction efforts.

In a response included in the report, the DOD said it plans to implement the recommended changes. However, the DOD also contended that the report contains factual errors, misinterpretations and unsupported conclusions.

In its response, the Navy claimed that the project is a strategic success and is meeting its goals of fostering information superiority and innovation. It noted that the new intranet has thwarted intrusion attacks that have penetrated other DOD systems.

The Navy also argued that some of the GAO's customer satisfaction measurements were incorrect. The GAO disagreed with that assertion. ▸

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FRANK HAYES ■ FRANKLY SPEAKING

Santa's on His Way

"WHAT'S with all the penguins this year?" Santa wondered aloud. The North Pole workshop was certainly full of the tuxedoed birds pushing around carts full of half-finished toys and nudging wrapped packages into his big sack. There were usually a few of them around the place, but nothing like this.

"Dude, didn't you get the memo?" said a young elf skidding to a stop in his Heelys at the jolly old fellow's desk. "They're the best temps we've ever had. They sing, they dance, everybody likes them. Besides, they work for fish."

"But where are the rest of the elves?" asked Santa.

"Out fishing," the elf said. "Hey, big dude, did you finish up that list of who gets what among the technodudes? We're coming close to deadline on that."

"It gets harder every year," Santa grumbled. "What do you give someone like Bill Gates?"

"That old Microsoft dude?" asked the elf. "Dude, I read about him — he's gonna spend the next two years having a retirement party. And isn't he the guy who said he really wanted a Mac?"

"No, that's Jim Allchin, the other Microsoft du— er, executive who's retiring," said Santa.

"I know, give 'em both copies of that new Vista thing," said the elf. "That way they won't get shot while they're standing in line to buy it."

"You're some help," Santa sighed. "Maybe we can give them coupons. Scott McNealy retired as Sun's CEO this year too, but all he asked for is a case of beer for his amateur hockey team and Steve Ballmer's address. Let's see, who else? Larry Ellison almost bought Novell last year, and now he's going after Red Hat. He really seems to want Linux."

"Dude, get him one of those little green Linux laptops that MIT is making for poor kids," the elf said. "I heard the first 1,000 finally arrived from the factory in Shanghai. And who's this Mark Hurd dude?"

"Last man standing in HP's spying scandal," said Santa, "mainly because he never read any of the memos so he didn't have a clue. Let's give him a book on effective management. No, wait, make it an audio book, or he'll never read it."

"You mean an MP3, big dude," said the elf, looking over Santa's shoulder at the list. "And I know these dudes: Larry Page and Sergey Brin are the Google dudes who just bought YouTube from these other dudes, Chad Hurley, Steve Chen and Jawed Karim."

"Now I know what *you're* getting — a thesaurus," said Santa. "Give them all subscriptions to Napster. With so many people suing them for copyright infringement, they're about to replay that tune all over again. And speaking of tunes, poor Steve Jobs doesn't own his little animation studio Pixar anymore. Now he's just the biggest stockholder of Disney, to the tune of $3.7 billion. Send him a Scrooge McDuck cartoon for his iPod.

"For the people who make laptop batteries at Sony, some *really* long extension cords," Santa continued. "A truckload of paper ballots for Diebold to add to its e-voting systems — looks like the paperless voting booth isn't the future, it's history. And police whistles for 180,000 employees at Kaiser Permanente, to use every time their electronic medical records system freezes up.

"But I'll drop coal in the stockings of all those organizations that lost personal customer data to break-ins or stolen computers, like the Department of Veterans Affairs, the Pentagon, FedEx, Honeywell, Ernst & Young, Fidelity Investments, TD Ameritrade, ETrade, the Denver election commission, Ohio University, UCLA, Boeing . . ."

"Dude, that's a lot of coal!" said the elf.

"There's hundreds more," said Santa. "But for all the IT people who worked hard to do right by users *and* customers, send a better business climate — and a raise. Which reminds me, I still don't understand why these penguins are willing to work just for fish."

"Big dude," the elf said, "this workshop has central heat. Did you ever stand barefoot on an ice floe in the middle of winter?"

"Oh ho," Santa laughed. "Happy feet, indeed!"

FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at **frank_hayes@computerworld.com.**

That Darn Technology!

Pilot fish at home calls help desk about a networking problem. "Eventually, the technician told me to unplug the modem and turn off the PC," fish says. "After doing so, I returned to the phone and was surprised to find the technician gone. Then I realized the phone was completely dead and had no dial tone. Too late, I remembered that our new digital phone service also came in through that cable modem."

SHARK TANK

Ch-ch-changes

Remote user calls help desk pilot fish, complaining that a key application has stopped working. "Has anything changed recently?" fish asks. No, user assures him. Fish asks to speak to the local IT guy and then asks him if anything has changed on the laptop. No, nothing, local IT guy says. Oh, except that he just moved the hard disk to a different laptop with a different computer name. Sighs fish, "I wonder what would have to happen before he would consider the system to have changed."

It's There, Somewhere

Frantic user approaches support pilot fish waving a floppy disk. It's from a vendor and contains an important file that's needed right away. Put the disk in your floppy drive, fish patiently explains. "I don't have a floppy drive," user says. Yes, you do, says fish. "I've looked all over the PC and can't find one," says user. Fish walks back to the user's desk, peels away layers of sticky notes on the front of the PC and points to the distinctive slot. "Oh," user says. "Now how do I read the disk?"

Twister

I've worked and worked at reconnecting my mouse and keyboard, frustrated user tells pilot fish, but they just won't attach. Fish doesn't see why they shouldn't until he gets to the user's PC. "By the looks of them, apparently the user thought the connectors were twist-lock," sighs fish. "The pins were all twisted, and the center plastic was broken off inside the PC. I carefully informed the user that he would now need to get a USB keyboard and mouse."

Enough Said

Trouble ticket arrives from the help desk, and this support pilot fish doesn't get past the first few words before she begins to chuckle. The incident description begins: "My dog really had a good time with my cell phone . . ."

SHARKY'S PLANNING TO HAVE a good time over the holidays, and he hopes you do, too. *Computerworld* will take its usual year-end week off and return Jan. 1. In the meantime, let's do our own gift exchange: You send your true tale of IT life to me at **sharky@computerworld.com**, and I'll send you a stylish Shark shirt if I use it. And you can always check out Sharky's blog – a new tale every weekday – browse the Sharkives and sign up for Shark Tank home delivery at **computerworld.com/sharky.**

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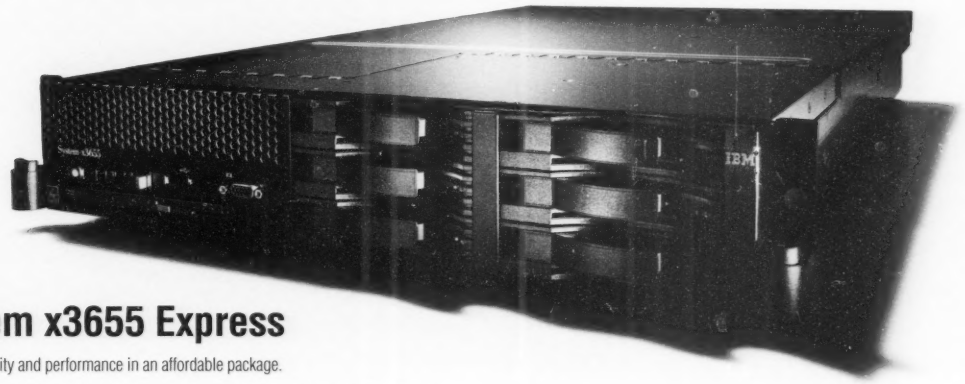

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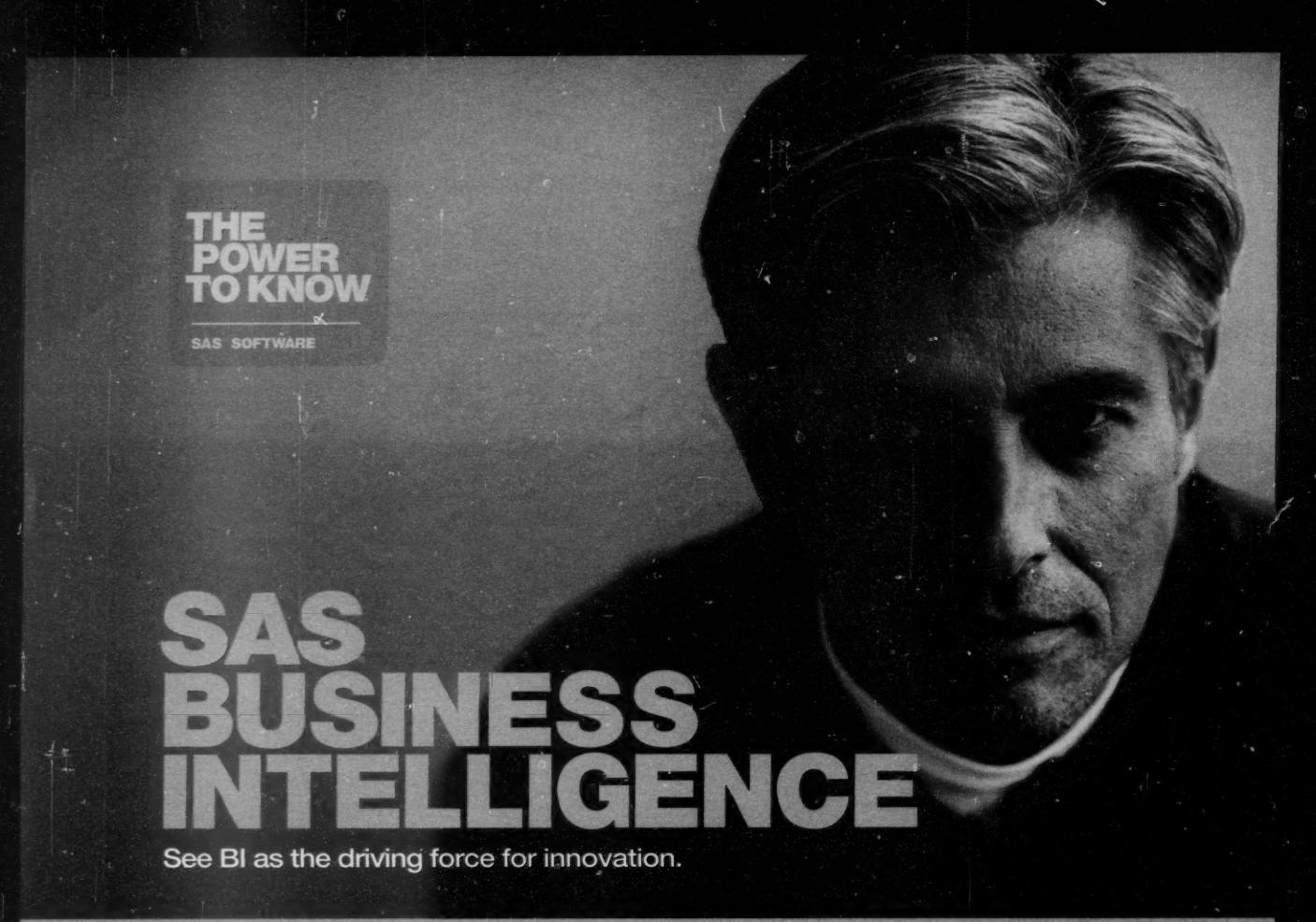

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